

Fish and Aquatic Habitat Collaborative Effort

Draft Program Environmental Impact Report

Appendix Volume I

Santa Clara Valley Water District

State Clearinghouse #2015022008

Santa Clara County, California

June 30, 2021

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Draft Fish Habitat Restoration Plan

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Appendix A – Draft Fish Habitat Restoration Plan

Fish and Aquatic Habitat Collaborative Effort
Administrative Draft Environmental Impact Report

Santa Clara Valley Water District

Santa Clara County, California

June 2021

Appendix A – Draft Fish Habitat Restoration Plan

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C Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020

Glossary of Terms and Abbreviations

°C	degrees Celsius
ADSRP	Anderson Dam Seismic Retrofit Project
AF	acre-feet
AFRP	Anadromous Fish Restoration Program
AFY	acre-feet per year
AMP	Adaptive Management Program
AMT	Adaptive Management Team
ARWT	Advanced Recycled Water Treatment
Bay	San Francisco Bay
CCC	Central California Coast
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
Consensus Committee	FAHCE policy group
County	Santa Clara County
CRAM	California Rapid Assessment Method
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
CWMZ	Cold-water management zone
District Act	Santa Clara Valley Water District Act
DMP	Dam Maintenance Program
DPS	Distinct Population Segment
DSOD	Division of Safety of Dams
DWR	Department of Water Resources
EIR	Environmental Impact Report
	Ecological Monitoring and Assessment Program
ERP	Ecosystem Restoration Program
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FAHCE	Fish and Aquatic Habitat Collaborative Effort
FERC	Federal Energy Regulatory Commission
FHRP	Fish Habitat Restoration Plan
ft/sec	feet per second
GCRCD	Guadalupe-Coyote Resource Conservation District
HSI	habitat suitability indices
I-280	Interstate 280
Initialing Parties	Legally authorized representatives of Settlement Agreement Parties that initialed the 2003 Settlement Agreement. The initialing allows the agreement to be made available for public review and comment, submittal to the SWRCB as an offer for settlement of water rights complaint, and for the purpose of defining a project for environmental review.
ISA	Initialed Settlement Agreement
	maximum likelihood iterative process
MMP	mitigation and monitoring plan
NCCP	natural community conservation plan
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation

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One Water	*Integrated Water Resources Master Plan*
PIT	passive integrated transponders
POI	Points of Interest
RWQCB	Regional Water Quality Control Board
SBSPRP	South Bay Salt Pond Restoration Project
SCBWMI	Santa Clara Basin Water Management Initiative
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SCW	Safe, Clean Water and Natural Flood Protection Program
Settlement Agreement	*Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creeks* initialed by the Initialing Parties on May 27, 2003
SMP	Stream Maintenance Program
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAC	(FAHCE) Technical Advisory Committee
Three Creeks	Stevens Creek, Guadalupe River, and Coyote Creek and their watersheds, including tributaries
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
Valley Water	Santa Clara Valley Water District
VHP	Valley Habitat Plan
WRO	Water Rights Order
§	Section

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Chapter 1 – Introduction

This chapter presents a brief overview of Santa Clara Valley Water District (Valley Water), the drivers and scope of the Fish and Aquatic Habitat Collaborative Effort (FAHCE), and the resulting purposes of this Fish Habitat Restoration Plan (FHRP).

1.1 Background

The Santa Clara Valley Water District (Valley Water) was created by the California Legislature and operates as a State of California special district, with jurisdiction throughout Santa Clara County (County). Valley Water began managing water resources in the County in 1929, largely in response to the overpumping of Santa Clara Valley groundwater. Valley Water constructed conservation reservoirs to capture rainfall and replenish the underground aquifer through managed groundwater recharge. By 1938, construction had begun on six reservoirs: Calero, Almaden, Guadalupe, Vasona, Coyote, and Stevens Creek.

Between 1940 and 1950, the County population expanded from 30,000 to 291,000. Explosive post-war growth, combined with a major drought from 1940 to 1946, put a severe strain on local water resources. Groundwater levels continued to drop, and land subsidence worsened as a result of overpumping by agricultural, industrial, and residential users. In response, voters passed bonds to construct two more large dams to conserve flows: Lenihan Dam/Lexington Reservoir on Los Gatos Creek and Anderson Dam on the Coyote Creek mainstem.

By 1960, the County population had doubled to 642,000. To meet the increased water demand, the California Department of Water Resources (DWR) State Water Project (SWP) began water delivery to the County in 1965 via the South Bay Aqueduct. However, land subsidence was not halted until the federal Central Valley Project (CVP) began delivering imported water to the County from the San Luis Reservoir in 1987.

The more than 1.9 million residents and economy of the County rely on diverse water supply sources. These sources include local surface water, groundwater, and imported water. While local groundwater resources are the foundation of the County water supply, Valley Water augments local supplies with imported water and through comprehensive water supply management—conjunctive use—which involves the coordinated use of surface water and groundwater supplies. Valley Water currently provides more than 110,800 acre-feet per year (AFY) of water for municipal and industrial use. Valley Water's water supply system is composed of storage, conveyance, recharge, treatment, and distribution facilities, which include local reservoirs; groundwater basins; groundwater recharge facilities; treatment plants; and imported, raw, and treated water conveyance facilities.

To meet countywide needs, Valley Water's water supply and distribution system relies on the following major facilities (Valley Water 2016):

- 10 dams and surface water reservoirs, totaling 169,000 acre-feet (AF) of reservoir storage capacity;
- eight instream water supply diversions;
- 18 miles of raw surface water canals;
- 25 groundwater recharge pond facilities that encompass nearly 400 acres;
- 91 miles of controlled instream recharge;
- 101 miles of pipelines;
- three pumping stations;
- three drinking water treatment plants; and
- an advanced recycled water purification center and state-of-the-art water quality laboratory.

Chapter 1 – Introduction

The primary purpose of the reservoirs is to store rainfall for release into local streams to recharge the groundwater basins. A small amount of local surface water from some reservoirs also supplies drinking water treatment plants, although the treatment plants are typically supplied by imported water (Valley Water 2016). Valley Water policy is to manage water storage and distribution facilities to meet multiple objectives, including water supply, flood protection, and stream stewardship.

The Stevens Creek, Guadalupe River, and Coyote Creek watersheds provide habitat for a variety of fish species, including the federally threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS). Hatchery stray Central Valley Evolutionarily Significant Unit (ESU) fall-run Chinook salmon (*Oncorhynchus tshawytscha*) now occur within the Guadalupe River and Coyote Creek watershed. Native Pacific lamprey (*Lampetra tridentate*) and California hitch (*Lavinia excilicauda*) found in all three watersheds and riffle sculpin (*Cottus gulosus*) found in the Guadalupe Watershed are also important native species and are listed as a California Species of Special Concern (Stillwater Sciences 2004).

Stevens Creek Reservoir on Stevens Creek, Calero, Guadalupe, Almaden, Vasona, and Lexington Reservoirs in the Guadalupe River watershed, and Coyote and Anderson reservoirs on Coyote Creek are operated by Valley Water to capture winter runoff and percolate most of it into the water supply aquifer using the stream channels or off-channel percolation ponds downstream of the reservoirs. This has resulted in reduced winter flood flows and higher summer stream flows in certain reaches downstream of reservoirs. In addition, imported Central Valley Project water can be transferred by pipeline among the watersheds for additional dry season stream bed percolation.

1.2 Fish and Aquatic Habitat Collaborative Effort

In 1996, the Guadalupe-Coyote Resource Conservation District (GCRCD), Trout Unlimited, and the Pacific Coast Federation of Fishermen's Association filed a complaint with the State Water Resources Control Board (SWRCB). The complaint alleged that Valley Water's operations impacted fish and wildlife in conflict with requirements of the Water Code, Fish and Game Code, and other State of California laws. A negotiation process was requested to re-establish adequate flows for the protection of fisheries and other aquatic resources in the watersheds of Stevens Creek, Guadalupe River, and Coyote Creek (collectively termed the "Three Creeks").

In response to the complaint, Valley Water convened state and federal resource agencies and local environmental organizations in settlement negotiations. This collaboration is referred to as the Fish and Aquatic Habitat Collaborative Effort (FAHCE), and its primary function has been to identify actions needed to balance Valley Water's water supply operations with aquatic habitat needs in the Three Creeks. The FAHCE participants included Valley Water, GCRCD[1], Trout Unlimited, Pacific Coast Federation of Fishermen's Association, California Trout Inc., San Francisco Bay Urban Creeks Council, Northern California Council of Federation of Fly Fishers, National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW, formerly known as the California Department of Fish and Game), collectively referred to hereafter as the "Initialing Parties". Measures developed through the FAHCE are intended to modify instream flows and improve habitat conditions to meet the management objectives specified in the *Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creeks,* which was initialed by the Initialing Parties on May 27, 2003 (Appendix A *Settlement Agreement*).

[1] GCRCD withdrew from FAHCE in June 2020.

The FAHCE process relied on a technical advisory committee (TAC[2]) and a policy group (known as the Consensus Committee). The TAC evaluated instream flow needs of cold-water fisheries steelhead and Chinook salmon and developed alternatives for fisheries management. The Consensus Committee established goals and objectives, and recommended management actions. These efforts identified measures, including reservoir reoperations and aquatic habitat enhancement, that ultimately formed the Settlement Agreement.

In support of the TAC's goal of identifying limiting factors to steelhead and Chinook salmon populations in the Three Creeks, the FAHCE identified passage flows insufficient for upstream and downstream migration, low habitat quality and limited availability, and high water temperatures as limiting factors on fish populations in the Three Creeks. The TAC established foundation principles to develop remedies or *solution options*, and created a conceptual framework to address these limiting factors through collaborative efforts among Valley Water, wildlife agencies, and the complainants. The TAC collected, compiled, and evaluated various data to develop the proposed solution options. These solution options were based on biological objectives established by the TAC, including adequate instream flows for steelhead and Chinook salmon migration and rearing; potential actions that would improve habitat quality and availability for adult passage, spawning, and juvenile migration and rearing; and suitable water temperatures, where feasible.

1.2.1 Settlement Agreement

The Settlement Agreement requires Valley Water to undertake certain instream flow and fish habitat restoration measures (outlined in Chapter 2 *Three Creeks Objectives and Common Elements* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*) on completion of the following four conditions:

A. completion of state environmental reviews (California Environmental Quality Act [CEQA] process);
B. dismissal of the water rights complaint;
C. completion of permitting efforts, contingent on other condition precedents; and
D. modification of Valley Water's Water Rights Licenses.

Valley Water relies on 18 water right allocations to divert local rainfall runoff into local reservoirs and to redivert water for recharge into two main groundwater basins. The Settlement Agreement addresses 15 of these water rights associated with streams in the Three Creeks watersheds. Section 2.1 *Beneficial Uses to be Protected* provides further details of these 15 Water Rights Orders (WRO) and includes a table (Table 2-1 *Valley Water's Water Right Orders*) that identifies the connections between each WRO and the Settlement Agreement measures.

The changes to the Water Rights Licenses and permit are proposed to preserve, support, and enhance fisheries and cold aquatic habitats, and are one of the identified steps to resolve the complaint filed before the SWRCB regarding Valley Water's reservoir and groundwater recharge operations. Technical changes include correcting the locations of points of diversion, updating maps, and changing the place of use to include the entire Valley Water service area to correctly reflect current operations. The petitions also request that Valley Water's Water Rights Licenses be amended to add Fish and Wildlife Preservation and Enhancement as a change in purpose of use of the affected Three Creeks waters. The Proposed Project supports the petition as it proposes modifying current operations to ensure that this change in purpose of use of water is achieved. Valley Water's Three Creeks' water rights petitions are concurrently being reviewed by the SWRCB, and acceptance of the changes are required to implement an FHRP; likewise, the Settlement Agreement assumes SWRCB's approval of the proposed changes to these water rights.

[2] The TAC included Valley Water staff and technical consultants, and representatives from USFWS, NMFS, CDFW, California Trout Inc., Trout Unlimited, the Pacific Coast Federation of Fishermen's Associations, and GCRCD.

The Settlement Agreement also details those provisions defined during the FAHCE process for flow measures, fish habitat restoration measures, and fish passage improvements. The TAC determined that application of these measures would restore and maintain healthy steelhead trout and Chinook salmon populations as appropriate for each of the Three Creeks by providing 1) suitable spawning and rearing habitat within each watershed, and 2) adequate passage for adult steelhead trout and Chinook salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles (Settlement Agreement § 6.2.2 *Overall Management Objectives*).

1.2.2 Fish Habitat Restoration Plan – Required Elements of the Settlement Agreement

Implementation of the actions identified by the TAC and described in this FHRP is a required element of the Settlement Agreement. The FHRP is intended to serve as the basis for settlement between the complainants and Valley Water, if accepted by all parties and approved by the SWRCB. Preparation of the FHRP, therefore, is an obligation of Valley Water and is required to amicably resolve the 1996 water right complaint.

The Settlement Agreement addressed improvements to fish habitat in three watersheds: Stevens Creek, Guadalupe River, and Coyote Creek. In 2015, Valley Water published a Notice of Preparation (NOP) for a single Environmental Impact Report (EIR) that would analyze impacts of Settlement Agreement implementation in all three watersheds, and Valley Water began preparation of a draft FHRP and Draft EIR that covered all three watersheds.

In 2019, however, Valley Water decided it would be more efficient to move the Coyote Creek watershed FAHCE measures to the Anderson Dam Seismic Retrofit Project (ADSRP) EIR. This decision was initially made because at the time, the ADSRP EIR was proceeding faster than the FAHCE EIR, and because the ADSRP post-construction reservoir operations and avoidance, minimization, or mitigation measures would be the same as the FAHCE Anderson Reservoir Reoperation Rule Curves and phase one non-flow measures. For efficiency, components of the FHRP focused in the Coyote Creek watershed were maintained in this FHRP. However, for the purposes of analyzing impacts pursuant to CEQA, all FAHCE Coyote Creek measures (including Coyote Creek non-flow measures) were included in the ADSRP EIR project description and impact analysis.

The measures associated with the Stevens Creek and Guadalupe River watershed, included in this FHRP, are analyzed in the FAHCE EIR for the purposes of CEQA. Therefore, Valley Water is preparing one FHRP and evaluating them in different EIRs.[3] However, for ease of future FAHCE implementation, Valley Water has also decided to develop a single monitoring and adaptive management framework that would be used for all three watersheds.

1.2.3 Updates to the 2003 Settlement Agreement

This FHRP will remain consistent with all articles outlined in the Settlement Agreement, with the following exceptions:

- The FHRP will be more expansive than described in the Settlement Agreement (see discussion in Section 1.2.4 *Fish Habitat Restoration Plan*);
- CEQA current baseline conditions that will be used for the two project EIRs (FAHCE and ADSRP) will be 2015 (2015 reflects the latest published water demands and usage in Valley Water's 2015

[3] This approach is consistent with CEQA requirements to avoid "piecemealing" because: 1) the Coyote Creek watershed is physically separated and isolated from the Stevens Creek and Guadalupe River watersheds; and 2) the Coyote Creek and Stevens Creek/Guadalupe River FAHCE measures have independent utility, in that the Coyote Creek measures could be implemented even if the Stevens Creek/Guadalupe River measures were not, and vice versa.

Urban Water Management Plan for all flow-impacted resource topics), per CEQA Guidelines § 15125 *Environmental Setting*; the Settlement Agreement had previously called for a 1996 CEQA baseline; and

- A change in the regulatory framework concerning federal regulatory compliance timing (described below).

In 2016, the Initialing Parties agreed to revise the regulatory pathway that had been detailed in Article V of the 2003 Settlement Agreement. Meeting minutes from the December 13, 2016, Valley Water Board of Directors meeting state that the change in regulatory pathway is a "key procedural element in moving forward on implementing the Settlement Agreement," allowing "federal permitting to occur after resolution of the water right complaint and concurrently with implementation of the FAHCE restoration measures."

More specifically, the obligation of the non-federal parties to the Settlement Agreement (SWRCB and CDFW) to implement measures defined in the document on satisfaction of specified conditions has not been changed. These conditions require Valley Water to conform to the articles of the Settlement Agreement and demonstrate compliance with all state regulatory requirements to support both dismissal of the water rights complaint and subsequent issuance of orders to amend existing Valley Water's water rights. Receipt of the amended WROs will trigger the "Effective Date" of the FHRP and prompt Valley Water's implementation of the Three Creeks measures (see Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)* for details on these measures). In addition, the obligation of the federal parties (USFWS and NMFS) to comply with conditions outlined in the Settlement Agreement, which are contingent on Valley Water's satisfaction of any applicable federal statutes or regulations such as compliance with the National Environmental Policy Act (NEPA), Clean Water Act (CWA), and Endangered Species Act (ESA) regulations, has been deferred, and will occur after issuance of the amended WROs but prior to Valley Water's implementation of any FHRP measures that require federal agency authorizations.

The amendment to the Settlement Agreement was circulated among the Initialing Parties prior to the December 13, 2016, Valley Water Board of Directors meeting, and they agreed in principle to pursuing the amended regulatory pathway as described above. CDFW and NMFS provided letters of support for the change in regulatory pathway. Although the initial 2016 amendment was more comprehensive and proposed additional changes to the Settlement Agreement, the amended regulatory pathway was the only revision accepted by the Initialing Parties that has been incorporated into the FAHCE process.

1.2.4 Fish Habitat Restoration Plan

To document how Valley Water will implement all applicable provisions outlined in the Settlement Agreement, this FHRP is broader in scope than the spawning and rearing habitat and fish passage enhancements specified in Settlement Agreement § 6.2.4.3. The FHRP will include measures described in the Settlement Agreement that correspond to actions related to their specific watersheds that have not yet been implemented, some within the discussion of Phase 1 actions and others in discussion of the *Adaptive Management Program*. Suites of measures outside the scope of Settlement Agreement § 6.2.4.3 that will be included in this FHRP include the following (Settlement Agreement sections are identified in parentheses):

- operational changes to non-emergency flow releases, referred to in this document as *Flow Measures* (§§ 6.2.4.1, 6.4.2.1, 6.5.2.1, 6.6.2.1.2.1, 6.6.2.1.4, and 6.6.2.1.5)
- all *Non-flow Measures*, including:
  - continuing efforts to improve fish passage (§ 6.2.4.2);
  - measures to enhance and restore geomorphic functions of the three watersheds (§ 6.2.4.4);

  - completion of an *Advanced Recycled and other Urban Water Plan* in coordination with the City of San Jose (§ 6.2.4.5);
  - other watershed-specific restoration measures (§§ 6.4.2, 6.5.2, and 6.6.2)
- adaptive management program, which describes processes for Phases 2 and 3 (if necessary), and Phase 4 (§ 6.7)

The activities described in this FHRP will occur in two or more phases. Phase 1 comprises activities common to all FAHCE watersheds, as well as actions specific to each watershed. Phase 1 actions were identified in the Settlement Agreement and are described in this FHRP as either common to all watersheds in Chapter 2 *Three Creeks Objectives and Common Elements*, or as watershed-specific in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures),* Chapter 4 *Guadalupe River Watershed (Phase 1 Measures)*, and Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

Phases 2 and 3 are decadal backup plans that will commence only if all goals and objectives of the preceding phase are not satisfactorily achieved, as determined by an AMT; therefore, these future potential actions are part of the Adaptive Management Program (AMP). In Phase 4, Valley Water operations would continue to provide for stream flows in accordance with the FHRP in perpetuity, and Valley Water would conduct ongoing monitoring and facilities maintenance. It is possible that Phase 4 will directly follow Phase 1 depending on the results of the monitoring to be conducted as part of the AMP. All objectives are subject to Phase 1, 2, and 3 funding obligations and limitations specified in Settlement Agreement Article VIII, Appendices C and D (Appendix A *Settlement Agreement*).

1.2.4.1 Purposes of the Fish Habitat Restoration Plan

The primary purpose of this FHRP is to serve as an implementation plan for those activities defined for the watersheds in the Settlement Agreement. This document addresses the issues raised in the original water rights complaint and also recommends an adaptive management program (that includes a monitoring program), proposed funding mechanisms, and a schedule for implementation.

The second purpose of this FHRP is to provide sufficient detail for each of the FHRP activities to the Stevens Creek, Guadalupe River, and Coyote Creek watersheds to support pending water right change petitions corresponding to these watersheds. This FHRP will ultimately be incorporated into an SWRCB-issued WRO that amends Valley Water's Water Rights Licenses in the Three Creeks to address California Fish and Game Code requirements and resolve the applicants' complaint. On May 1, 2015, the FAHCE Water Right Change Petition applications were filed with the SWRCB. These petitions are specific to those obligations defined by the FAHCE in the Settlement Agreement, requesting

> …SWRCB approval of proposed changes to water rights licenses to specify reservoir release rules; and facility and habitat improvements that will support FAHCE ISA [Initialed Settlement Agreement] objectives and support GCRCD withdrawal of the Complaint.

Because the FHRP will become a condition of Valley Water's Water Rights Licenses that authorize diversions on the Three Creeks, Valley Water will be unable to exercise their Water Rights Licenses unless they perform the related work. Hence, the FHRP is an unavoidable cost of distributing, recharging, and using water diverted from the Three Creeks into Valley Water's groundwater recharge zones, and a cost of maintaining and operating related Valley Water facilities. Moreover, those who rely directly and/or indirectly on groundwater supplies within these zones benefit from the FHRP, without which the groundwater supplies would be significantly impacted. Funding of the actions described in this FHRP is discussed in Chapter 6 *Adaptive Management Program.*

1.2.4.2 Settlement Agreement Measures Current Status

Table 1-1 provides a list of all Phase 1 measures that were either identified specifically in the Settlement Agreement or have been implemented by Valley Water and are consistent with FAHCE guidance provided in Settlement Agreement § 6.2.4. Per columns 3 (Measure Status) and 4 (Early Implementation Measure Status) in Table 1-1, all measures fall into one of four general status categories. Table 1-1 also indicates where in the FHRP information specific to that measure will be found (see column 5). As described below, all measures, regardless of category, are included in the AMP, and will be maintained by Valley Water for the future.

The three status categories include:

A. Measure Status=*Not Started*: These Phase 1 measures have not been implemented as of this FHRP document. If the measure is common to all Three Creeks (for example, trap-and-truck feasibility study), it is introduced as a Common Element in Chapter 2 *Three Creeks Objectives and Common Elements* of this FHRP; if the measure is specific to an individual watershed, it is discussed in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, according to watershed.

B. Measure Status=*In Progress*: These are Phase 1 measures that have some level of planning and/or construction completed, so the measure is considered "in progress." In some cases, this may have required separate CEQA compliance review and documentation. If the measure is common to all Three Creeks, it is introduced as a Common Element in Chapter 2 *Three Creeks Objectives and Common Elements* of this FHRP; if the measure is specific to an individual watershed, it is discussed Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, according to watershed.

C. Early Implementation Measure Status=*Complete*: These measures have been successfully implemented by Valley Water or others. Since these efforts have already been completed, they are not included in Chapter 2 *Three Creeks Objectives and Common Elements* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)* of this FHRP; summaries of completed early implementation measures are included in Appendix B *Documentation of Completed Settlement Agreement Obligations*. Responsibility for monitoring, maintenance, and adaptive management that may be deemed necessary in the future at these locations remains a Valley Water obligation under this FHRP; therefore, these measures are included in the programs outlined in Chapter 6 *Adaptive Management Program*.

Table 1-1. Status of Settlement Agreement Measures

Settlement Agreement Provision	Measure Title	Measure Status	Early Implementation Measure Status	Year Work Initiated/ Completed	Reference Location in FHRP
Measures Common to All Watersheds					
6.2.4.4.3	Bank Stabilization Guidelines	Not Started			Chapter 2
6.2.4.5	Advance Recycled and Other Urban Water Plan	Not Started			Chapter 2
6.2.4.3.1, 6.2.4.3.2, 6.2.4.3.3	Spawning and Rearing Habitat; Passage	In Progress			Introduction in Chapter 2; Elements Specific to Creeks in Chapters 3–5

Settlement Agreement Provision	Measure Title	Measure Status	Early Implementation Measure Status	Year Work Initiated/ Completed	Reference Location in FHRP
Stevens Creek Watershed					
6.2.4.1	Flow Measures	Not Started			Introduction in Chapter2; details in Chapter 3
6.2.4.2	Continuing Efforts to Improve Fish Passage – Overview	In Progress			Chapter 2
6.2.4.2 (02)	Blackberry Farm Vehicle Ford #1 HB24		Complete	2009	Appendix B
6.2.4.2 (03)	Blackberry Farm Vehicle Ford #3 HB26		Complete	2009	Appendix B
6.2.4.2 (18)p	Fish Passage Assessment at Moffett Drop Structure (SCW D4 project)		Complete	2016	Appendix B
6.2.4.4.1, 6.2.4.4.2	Geomorphic Functions Study and Pilot Projects	Complete			Chapter 2
6.5.2.2	Priority Barriers Status				Chapter 3
6.5.2.2 (A1)	Moffett Fish Ladder – HL1	Not Started			Chapter 3
6.5.2.2 (A2)	Evelyn Fish Ladder – HL2		Complete	2016	Appendix B
6.5.2.2 (A3)	Fremont Fish Ladder – HL3	Not Started			Chapter 3
6.5.2.2 (A4)	Stream Gage 35 – HB10		Complete	2002	Appendix B
6.5.2.2 (B1)	Blackberry Farms Road Crossing – HB25		Complete	2009	Appendix B
6.5.2.2 (B2)	Blackberry Farms Irrigation Diversion – HB27		Complete	2009	Appendix B
6.5.2.3	Portable Multi-port Outlet	Not Started			Chapter 3
6.5.2.4	Hypolimneal Aeration		Complete	2014	Appendix B
6.5.2.5	Trap-and-Truck Feasibility Study	Not Started			Chapter3
Guadalupe River Watershed					
6.2.4.1	Flow Measures	Not Started			Introduction in Chapter2; details in Chapter 4
6.2.4.2	Continuing Efforts to Improve Fish Passage – Overview	In Progress			Chapter 2
6.2.4.2 (01)	Almaden Expy./ Confluence Critical Riffle Formation DB01		Complete	2005	Appendix B

Settlement Agreement Provision	Measure Title	Measure Status	Early Implementation Measure Status	Year Work Initiated/ Completed	Reference Location in FHRP
6.2.4.2 (04)	Camden Ave. Sediment/Critical Riffle Formation DB03 (SMP)		Complete	2007	Appendix B
6.2.4.2 (09)	Masson Diversion Dam DB02 Fish Ladder and Screen		Complete	2000	Appendix B
6.2.4.2 (11)	SF 43 Gauging Weir DB05		Complete	2004	Appendix B
6.2.4.2 (12)	U-frame Channel DB06		Complete	2008	Appendix B
6.2.4.2 (15)	Kirk Diversion Dam and Fish Screen Improvements		Complete	2014	Appendix B
6.2.4.4.1, 6.2.4.4.2	Geomorphic Functions Study and Pilot Projects	In Progress			Chapter 2
6.5.2.2	Priority Barriers Status				Chapter 4
6.6.2.1.1 (A1)	Alamitos Drop Structure		Complete	2001	Appendix B
6.6.2.1.1 (A2)	St. John Street Gage Weir AB7		Complete	2004	Appendix B
6.6.2.1.1 (B1)	Hillsdale Avenue Bridge – AB13		Complete	1998	Appendix B
6.6.2.1.1 (B2)	SJWC Low-flow Crossing		Complete	1998	Appendix B
6.6.2.1.2.2	Pheasant Creek Culvert	Not Started			Chapter 4
6.6.2.1.2.2	Old Dam	Not Started			Chapter 4
6.6.2.1.3.2	Drop Structure (Bertram Road)	Not Started			Chapter 4
6.6.2.1.3.3 (A)	Almaden Dam Volitional Passage Study	In Progress			Chapter 4
6.6.2.1.3.3 (B)	Plan for Almaden Lake		Complete	2021	Chapter 1
Coyote Creek Watershed					
6.2.4.1	Flow Measures	Not Started			Introduction in Chapter2; details in Chapter 5
6.2.4.2	Continuing Efforts to Improve Fish Passage – Overview	In Progress			Chapter 2
6.2.4.2 (05)	Coyote Canal Diversion Fish Ladder and Screen FB27		Complete	2000	Appendix B
6.2.4.2 (06)	Coyote Percolation Pond Fish Ladder FB26		Complete	1999	Appendix B

Settlement Agreement Provision	Measure Title	Measure Status	Early Implementation Measure Status	Year Work Initiated/ Completed	Reference Location in FHRP
6.2.4.4.1, 6.2.4.4.2	Geomorphic Functions Study and Pilot Projects	In Progress			Chapter 2
6.2.4.4.3	Bank Stabilization Guidelines	Not Started			
6.4.2.1.2	Priority Barriers Status				
6.4.2.1.2 (A1)	Upper Penitencia Recharge Pond Diversion /Noble–GB03		Complete	1999	Appendix B
6.4.2.1.2 (A2)	Upper Penitencia Mabury/Overfelt Recharge Pond Diversion	Complete		1998	Chapter 5; Appendix B
6.4.2.1.2 (B1)	Ogier Road Quarry Pond Complex – FB34	Not Started			Chapter 5
6.4.2.1.2 (B2)	Singleton Road Low-flow Crossing – FB24	In Progress			Chapter 5
6.4.2.1.2 (B3)	Upper Penitencia Creek – Unscreened Water Diversion Barrier GB15	Not Started			Chapter 5; Appendix B
6.4.2.1.3 (A)	Laguna Seca Groundwater Feasibility Study	Not Started			Chapter 5
6.4.2.1.3 (B)	Coyote Percolation Ponds (Metcalf Ponds) Stream Corridor Restoration-Feasibility Study	In Progress			Chapter 5
6.4.2.1.4	Cooperative Agreement for Cherry Flat Reservoir	Not Started			Chapter 5
6.4.2.1.5	Trap-and-Truck Feasibility Study	Not Started			Chapter 5

As shown in Table 1-1, eight barrier removals identified in the Settlement Agreement have not been implemented to date and are part of this FHRP: two in the Stevens Creek, three in the Guadalupe River, and three in the Coyote Creek watersheds.

1.3 Additional Regulatory Considerations

1.3.1 Dam Safety Operations Restrictions

Dam safety operations restrictions were placed by the DWR, Division of Safety of Dams (DSOD) on Anderson, Coyote, Almaden, Calero, and Guadalupe Reservoirs—five of the eight reservoirs in the FHRP area—that temporarily reduce reservoir storage capacities until identified safety concerns specific to each dam have been addressed. These restrictions have resulted in loss of more than 46,000 AFY or approximately a quarter of the total surface storage capacity (Table 1-2), as well as significant loss of water

supply yield (Valley Water 2018). Anderson Dam is subject to additional safety restrictions imposed by the Federal Energy Regulatory Commission (FERC).

Four of these Valley Water facilities have ongoing projects that are at varying phases of study and design to address safety concerns that are currently limiting the capacity of each facility. These projects include:

- ADSRP together with the FERC Order Compliance Project implemented in 2020 to provide interim flood protection until the ADSRP is completed;
- Guadalupe Reservoir Seismic Retrofit Project;
- Almaden Dam Improvements Project; and
- Calero Reservoir Seismic Retrofit Project.

The timeframe for engineering, environmental review, and implementation of each of these projects will be staggered over many years. These projects are not part of the FHRP; however, reservoir capacity limitations resulting from the DSOD restrictions at Guadalupe, Almaden, and Calero Reservoirs are relevant to implementation of the FHRP and are noted on Reoperation Rule Curve diagrams that are provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, corresponding to each watershed.

As a result of the reservoir capacity restrictions, implementation of the reservoir flow releases (such as the pulse flow releases) that make up the proposed Reoperation Rule Curves will be limited to flow release levels that correspond to the interim restricted capacity of each facility, assuming water storage reaches that level in a given year, until each retrofit project is completed. This further means that since optimal FHRP-proposed flow releases at these reservoirs will not occur until DSOD operational restrictions are lifted, monitoring following the implementation of proposed project measures should consider these limitations in assessing the effectiveness of the measures and defining needs for future reservoir-specific adaptive management. Environmental review under CEQA for implementation of the FHRP will consider both post-measure-implementation scenarios—the interim phase during which reservoir capacities will be restricted at these facilities, and the future period when these five reservoirs will be operating at full capacities with no DSOD limitations.

Table 1-2 summarizes the current operating status for each of the eight reservoirs in the FHRP area, including original and present-state DSOD dam safety restrictions, if applicable.

Table 1-2. Dam Safety Operating Status for each Valley Water Reservoir in FHRP Area

Reservoir	Year Built	Original Capacity (AF)[a]	Restricted Capacity (AF/percent of original capacity)[b]	Cause of DSOD Dam Safety Operating Restriction
Stevens Creek Watershed				
Stevens Creek	1935	3,138	--	Currently no restriction until seismic review is finalized
Guadalupe River Watershed				
Almaden	1935	1,586	1,472/93%	Requires outlet and spillway upgrades
Calero	1935	9,934	4,585/46%	Seismic retrofit required
Guadalupe	1935	3,415	2,218/65%	Seismic retrofit required
Lexington	1952	19,044	--	No restrictions
Vasona	1935	495	--	No restrictions

Reservoir	Year Built	Original Capacity (AF)[a]	Restricted Capacity (AF/percent of original capacity)[b]	Cause of DSOD Dam Safety Operating Restriction
Coyote Creek Watershed				
Anderson	1950	90,373	61,810/68%	Seismic retrofit required
Coyote	1936	23,244	12,382/53%	Permanent restriction

[a] Original Capacity = available water storage capacity at reservoir without DSOD dam safety operating restrictions
[b] Restricted Capacity = available water storage capacity at reservoir with DSOD dam safety operating restrictions

1.3.2 Lake and Streambed Alteration Agreements

Valley Water's water supply operations include the diversion, release, and transmission of surface water through the use of surface water reservoirs, natural stream facilities, recharge ponds, and canals. Valley Water's instream recharge activities are subject to Fish and Game Code § 1602 requirements, and Valley Water must submit a notification of streambed alteration to CDFW for these types of activities. Under Code § 1602, CDFW regulates the activities of any person, state, or local governmental agency or public utility that would affect such resources, and can impose conditions through a Lake or Streambed Alteration Agreement (LSAA) to ensure no net loss of values or acreage of the stream, lake, associated wetlands, or associated riparian habitat. These agreements specify operational conditions such as timing of releases, minimum bypass flows, and monitoring requirements. Currently, only the Alamitos Diversion in the Guadalupe River Watershed has a current LSAA (1600-2018-0385-R3). There are no current diversions in the Stevens Creek watershed that requires LSAAs; LSAA renewals in process for diversions in the Guadalupe River and Coyote Creek watersheds include (Notification Numbers follow each in parentheses):

- Kirk Diversion, Guadalupe River Watershed (1600-2018-0386-R3)
- Masson Diversion, Guadalupe River Watershed (1600-2018-0384-R3)
- Coyote Diversion, Coyote Creek Watershed (1600-2018-0383-R3)
- Mabury Diversion, Coyote Creek Watershed (1600-2018-0382-R3)

1.4 Geographical Coverage of Plan

This FHRP identifies changes in Valley Water's water supply operations and infrastructure improvements that are intended to improve fish habitat in the Three Creeks, where water supply operations affect instream flows. Healthy and thriving native fish populations are an integral part of Valley Water's environmental, economic, stewardship, and management goals for the County's rivers, creeks, sloughs, and reservoirs (Valley Water 2016). The following sections provide a brief overview of the geographical coverage and current operations of each watershed to provide context for proposed fish habitat restoration actions discussed in the following chapters.

1.4.1 Three Creeks Overview

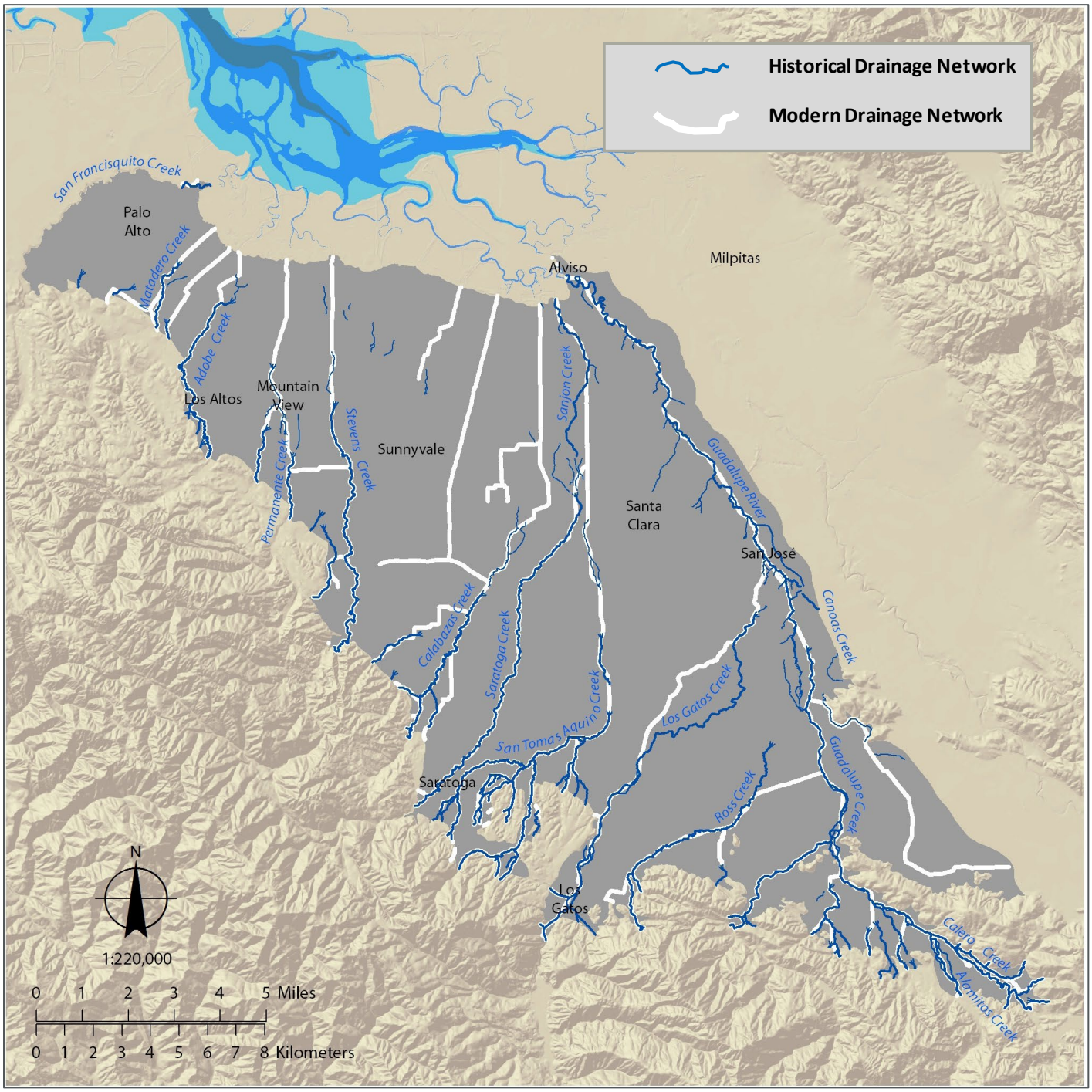
Prior to European settlement and subsequent significant urban development of the valley, rainfall runoff from the hills surrounding the valley passed rapidly through the upper watersheds to the valley floor, where water quickly percolated through the highly permeable subsurface soils into the groundwater aquifer. Water flowing in creeks on the valley floor generally seeped into the permeable alluvial fan soils or spread out in areas of low permeability and then, in many cases, reappeared as sloughs, springs, and wetlands or in creek channels closer to San Francisco Bay (Bay) in the confined (low permeability) geologic zone (Beller et al. 2010).

It is likely that, during the dry summer season, percolation rates in the Three Creeks along the valley floor often exceeded surface water flow rates, causing historic periods of zero flow in the channels. As the dry season progressed, the middle reaches of creeks would often dry back or, more accurately, go underground such that local streams were frequently dry or had very low flows downstream of the alluvial fan zone (or recharge zone) even though water continued to move through the watershed. Furthermore, some creeks, such as most of Coyote Creek, were historically an intermittent stream under natural conditions (Beller et al. 2010). Exceptions were limited to the lowest reach of the alluvial plain (Grossinger et al. 2006) and, to some extent, in the upper reaches.

While many of the large creeks in the valley have been assumed to be perennial in a historical context, historical review for the County also indicates that natural stream channels within the valley floor were not well connected, and many did not have a continuous connection to the Bay (Figure 1-1). In the early nineteenth century, none of the creeks in the County (with the exception of San Francisquito) maintained a defined channel from the hills to the Bay. Today, every major drainage has been connected. In addition, prior to significant European and American settlement, stream conditions may also have been characterized by a less competent channel form where braided channel conditions prevailed along the alluvial fan (Beller et al. 2010).

European settlement and the initiation of irrigated farming resulted in significant changes to natural stream conditions and watershed hydrology of the Three Creeks area. To contain flood flows, stream channels were enlarged and levees were constructed. To quickly convey flood flows through vulnerable portions of the lower watersheds, previously natural stream channels were hardened with concrete and/or straightened. In addition, urbanization has greatly reduced the amount of permeable land, resulting in faster runoff occurring in the streams.

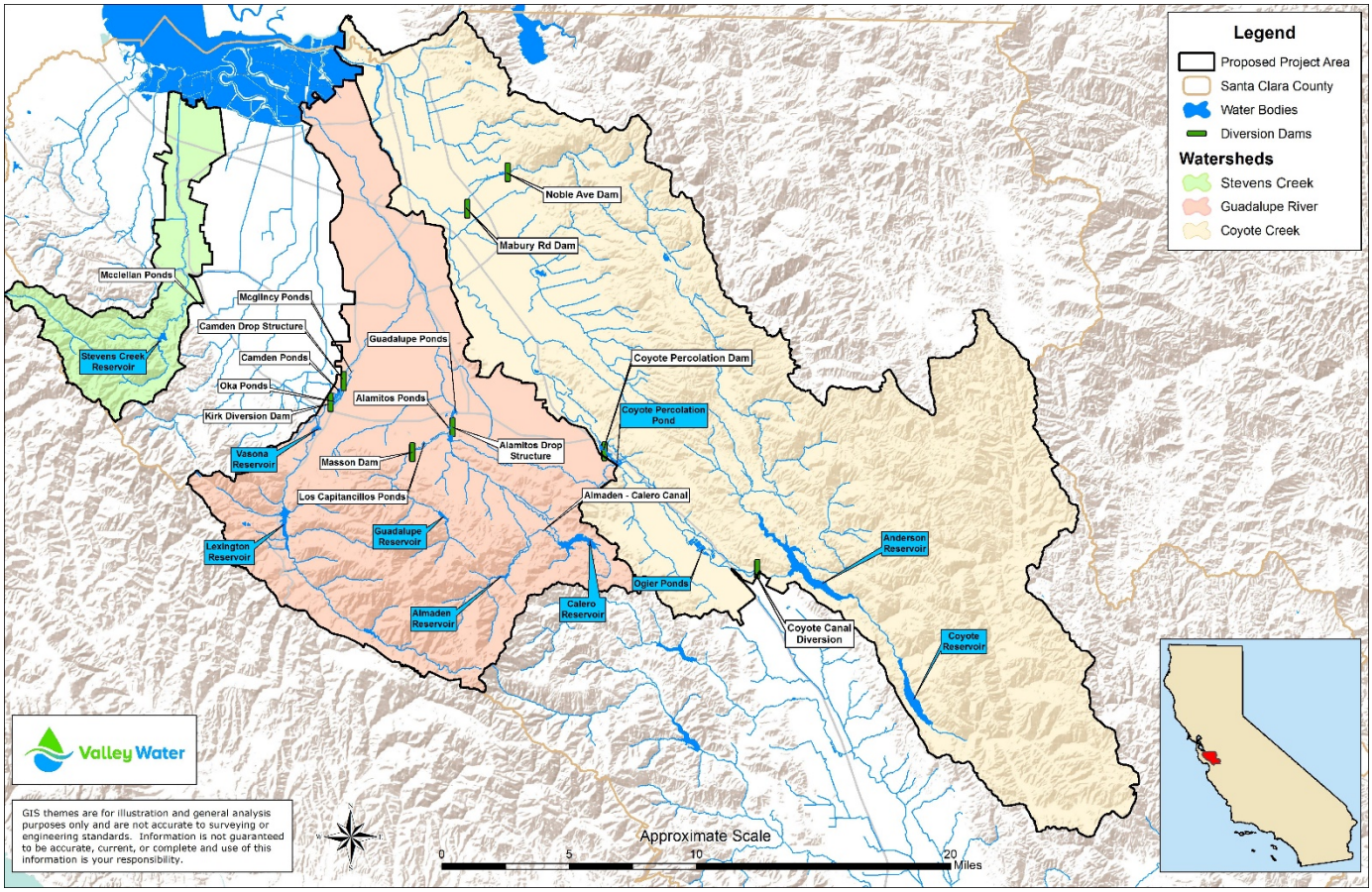
Figure 1-1. Historical Drainage Network (Circa 1800) and Modern Drainage Network (2007) in Western Santa Clara Valley



Chapter 1 – Introduction

Since the formation of Valley Water, additional changes to streams and the watershed have occurred through the construction and operation of stormwater, flood management, and groundwater recharge and water supply facilities. The degree of stream habitat modification increases from upstream to downstream as the intensity of development increases. Modifications to the streams included the building of levees and dams, canals, pipelines, ditches, culverts, concrete channels, flow modification structures, diversion structures, fish ladders, and other facilities (Figure 1-2).

Figure 1-2. FHRP Area and Valley Water's Water Supply Facilities

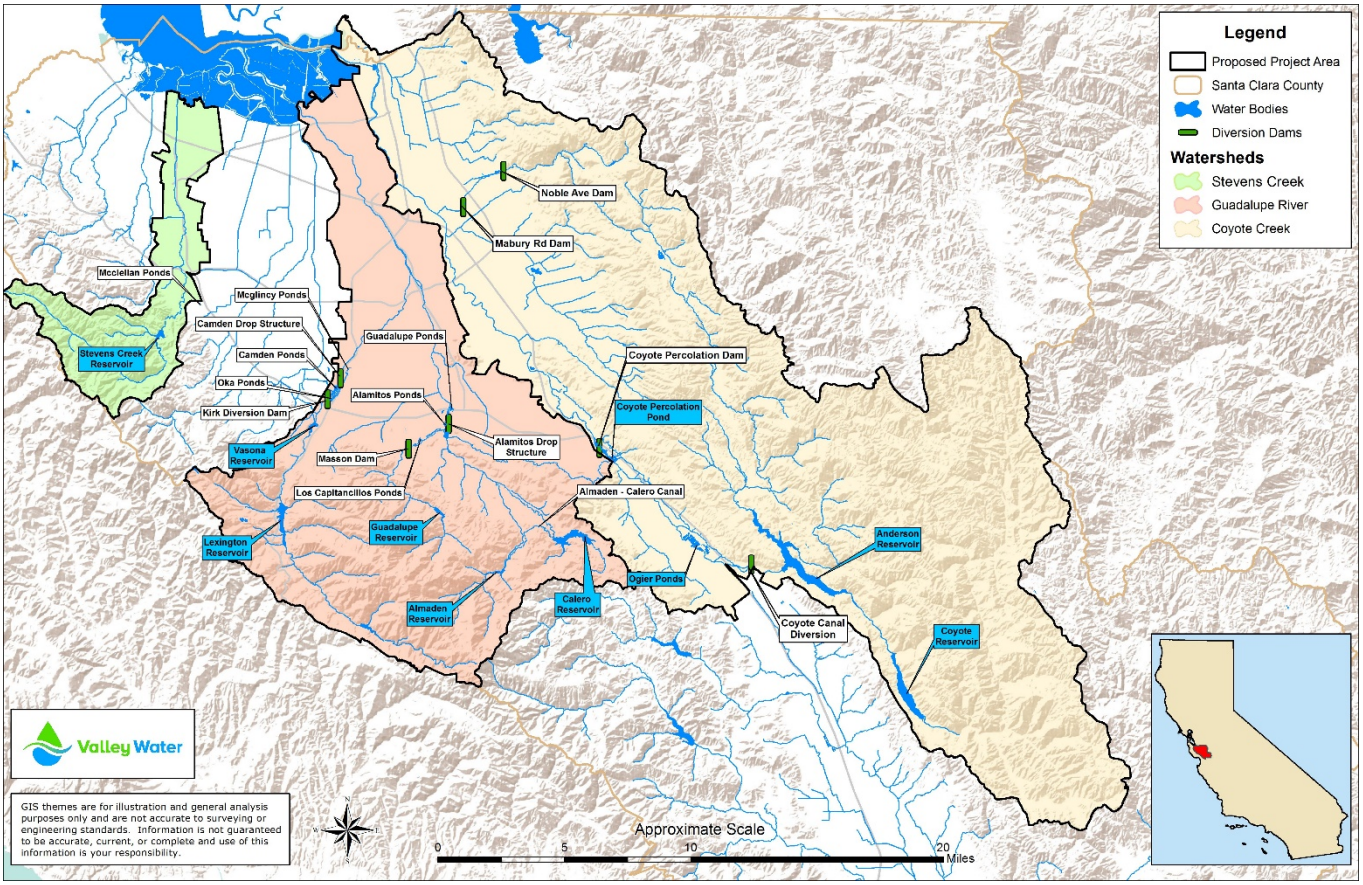


The urbanization of Santa Clara Valley has also changed summer flow patterns. Summer runoff from irrigated agriculture, gardens, and lawns; discharge of nuisance water from foundation pumps; and other shallow groundwater drain connections often lead to unnaturally high summer flows. Additionally, winter runoff from urban areas is accelerated by the amount of impervious surface. Urban discharges may also transport relatively high concentrations of pollutants and excess nutrients to the streams via the municipal storm sewer systems. Overall, alterations to the urban landscape, as a result of development of the valley floor, continue to be external stressors to the stream environment.

The FHRP area is located in the Stevens Creek, Guadalupe River, and Coyote Creek watersheds (Figure 1-2). Specifically, it includes the streams, rivers, and creeks below the associated dams and upstream of the tidally-influenced sections of Stevens Creek, Guadalupe River, and Coyote Creek. Valley Water's water supply operations in the FHRP area include eight reservoirs, a network of conveyance systems, and percolation ponds that provide recharge to local groundwater basins (Figure 1-3). Reservoir

facilities manage and release instream flows to creeks and rivers in the Three Creeks and recharge the Santa Clara Plain portion of the Santa Clara Subbasin, where released water is used to prevent groundwater pumping-related subsidence and also is pumped directly from the creeks to provide municipal and industrial supplies. As discussed in Section 1.3.1 *Dam Safety Operations Restrictions*, eight Valley Water dams within the Three Creeks watershed are licensed by SWRCB and maintained under requirements of DWR DSOD; five of these eight reservoirs currently have DSOD water storage restrictions due to dam safety concerns.

Figure 1-3. Santa Clara Valley Water District – Points of Diversion in Three Creeks Watersheds



Reservoir releases and associated maintenance activities also have the potential to affect aquatic and terrestrial wildlife species. These activities are described separately in the Dam Maintenance Program (DMP) EIR. This 20-year program identifies activities that are carried out in a series of 5-year work plans. The current work plan (2018–2022) is under a 5-year permit with CDFW and the San Francisco and Central Coast Regional Water Quality Control Boards (RWQCBs). The DMP relies on the *Santa Clara Valley Habitat Plan* (VHP) for take authorization for species covered under the plan during certain dam maintenance activities within the VHP permit area. Coordination with the appropriate regulatory agencies (such as CDFW, USFWS, NMFS) is required for effects to species not covered under the VHP.

Sections 1.4.2 *Stevens Creek Watershed* through Section 1.4.4 *Coyote Creek Watershed* provide brief overviews of the water rights; reservoir operations; and programs, projects, and studies underway for each of the Three Creeks watersheds. Further details regarding each watershed, along with corresponding

FAHCE watershed-specific objectives and proposed measures, are provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

1.4.1.1 Fisheries Habitat

Due to the semi-arid climate of California, the diversity of native fish is limited to 66 freshwater, estuarine, and anadromous fish (not including subspecies; Moyle 2002). Moyle (2002) divided California into six ichthyological (the study of fishes) provinces based on their long-term isolation, as indicated by the presence of endemic species. The Sacramento-San Joaquin Province includes most of Central California. Within this province, 40 native fish species are present. This province is further divided into seven sub-provinces based on the fish populations supported, including Goose Lake, Pit River, McCloud River, Central Valley, Clear Lake, Monterey Bay, and Upper Kern River.

Based on historical fisheries research, it has been determined that at least 16 different species are endemic to stream systems within the County (excluding estuarine fishes that remain at the mouth of the river; Valley Water 2016). Anadromous species such as Chinook salmon, chum salmon (*Oncorhynchus keta*), pink salmon (*Oncorhynchus gorbushcha*), and eulachon (*Thaleichthys pacificus*) have been observed in the County in the last 25 years, and are native to California and the Sacramento-San Joaquin Province, but historical data suggest they are not native to County watersheds and only occurred on a transient basis. For example, only two records of pink salmon have occurred in the County in recent years, both on the lower Guadalupe River, with the first occurring in December 2003. Due to the timing, this individual was presumably a stray. Very low numbers of chum were also observed in the lower Guadalupe River, and one on Coyote Creek, in the early 2000s; these are also presumed to be strays.

Chinook salmon observations started in the County in the 1980s. Central Valley ESU fall-run Chinook salmon are a California Species of Special Concern and a NMFS Species of Concern. The NMFS designation only applies to "…all naturally spawned populations of fall-run Chinook Salmon in the Sacramento and San Joaquin River Basin and their tributaries, east of Carquinez Strait, California" (CDFW and USFWS 2010). CDFW consider Chinook salmon a Species of Special Concern and indicate that the species is found within Central Valley rivers and streams, and range maps do not include the County (CDFW 2021). The FHRP area is not included in the areas designated by NMFS and CDFW; further, Chinook salmon in the County are known to be of hatchery origin based on historical occurrence data, genetic testing, and the presence of adipose fin-clipped fish in the system (Garcia-Rossi and Hedgecock 2002; Garza and Pearse 2008a; Valley Water 2018). Specific genetic testing of more than 450 Chinook salmon captured in Santa Clara Valley indicate the fish are closely related to Chinook salmon of hatchery origin, and the presence of fin-clipped hatchery fish with coded wire tags indicates a strong probability of straying (Garcia-Rossi 2002 as cited in Valley Water 2016). Hatchery-stray Chinook salmon have been observed in the Guadalupe River and Coyote Creek watersheds since the mid-1980s.

Within the FHRP area, steelhead have been found in the Stevens Creek, Guadalupe River, and Coyote Creek watersheds (Leidy 2005). Today, all three watersheds (Figure 1-2) contain federally threatened CCC steelhead DPS in low numbers. Additionally, Chinook salmon utilize the Guadalupe River and Coyote Creek watersheds in low numbers.

The introduction, naturalization, and straying of fish species into the Santa Clara Valley has led to a general increase in species richness; however, this may be to the detriment of native fish populations. The development of reservoirs, impoundments, and diversions has increased available habitat for non-native warm-water species, and imported water has been a vector for the introduction of species from outside the watershed. Other potential vectors of introduction include sport fish management, sport fishing, biological controls, aquaculture, and pets (Moyle 2002). Non-native species may predate native steelhead or increase competition for resources.

As previously stated, eight dams at the Valley Water-owned reservoirs block upstream migration to upper watershed reaches. With the exception of the Calero Reservoir, populations of resident rainbow trout exist upstream of the reservoirs. These rainbow trout are genetically keyed to be the same as CCC steelhead (Garza and Pearse 2008a). In addition to reservoirs limiting access to upstream habitat, extensive urbanization has altered stream hydrology and available habitat, which can adversely affect the populations of steelhead below the reservoirs. Hydromodification can result in changes to vegetative communities downstream, which may affect entire ecosystems. While increased streamside vegetation may increase stream shading and input of terrestrial insects and woody debris into waterways, alterations to natural patterns of shading to creeks (for example, as a result of changes in hydrology or planting of vegetation) have cascading effects on biomass and production of benthic macroinvertebrates, which are an important food source for trout. Clearing of woody debris from channels to reduce flood risk further reduces habitat suitability for salmonids by reducing habitat complexity, cover, and refugia during high flows. Additional watershed-specific habitat information can be found in each watershed summary, and in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

1.4.1.2 Ongoing Watershed Programs and Projects

The current direction of federal and state aquatic habitat and fisheries regulation is watershed-based management (Valley Water 2016). While this was discussed for decades, it is occurring now with implementation of habitat conservation plans (HCPs), natural community conservation plans (NCCPs), rare species recovery plans, mitigation banking, Compensatory Mitigation for Losses of Aquatic Resources: Final Rule (USACE and EPA 2008), SWRCB's Watershed Management Initiative, and Wetland and Riparian Area Protection Policy. Valley Water has been directly involved in some of these efforts, such as the *Santa Clara Valley Habitat Plan* as co-permittee (an HCP and NCCP). Mitigation for the Valley Water's Stream Maintenance Program (SMP) environmental effects requires preserving large areas of land and focusing on watershed, stream, and rare species protection. Valley Water's master planning efforts, in conjunction with Board policies and the various laws and regulations, should help to bring positive change on a more programmatic level regarding watershed and environmental management.

Valley Water and other state and federal agencies have also created partnerships with non-profits and other agencies to create and restore habitat through a variety of public programs and projects that may provide implementation guidance, and in some cases funding resources, for proposed measures in any of the Three Creeks, as well as other watersheds in the Valley Water area. A selection of related programs and projects are discussed in the following sections.

Safe, Clean Water and Natural Flood Protection Program

In November 2012, the voters of Santa Clara County supported Measure B, the Safe, Clean Water and Natural Flood Protection Program (SCW). 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. In November 2020, voters in the County overwhelmingly (greater than 75%) approved Measure S, a renewal of SCW 2012 that will be effective July 2021. The five priorities identified for the 2012 program, and renewed for 2021, include:

A. ensure a safe, reliable water supply;
B. reduce toxins, hazards and contaminants in our waterways;
C. protect our water supply and dams from earthquakes and natural disasters;
D. restore wildlife habitat and provide open-space access; and
E. provide flood protection to homes, businesses, schools, streets, and highways.

Each fiscal year, priority objectives are developed and approved by the Valley Water Board of Directors; standard and "mini" grant proposals are accepted through an online application system. Multiple projects have been identified under each of the five priority areas listed above; those that are directly connected to fisheries and fisheries habitat and are general to all streams are listed in Table 1-3. The complete 2012 and 2020 programs are found in Appendix C *Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020*.

Table 1-3. Safe, Clean Water and Natural Flood Protection Program Projects

2012 Projects	2020 Projects
B1 Impaired Water Bodies Improvement	B1 Impaired Water Bodies Improvement
B2 Inter-Agency Urban Runoff Program	B2 Inter-Agency Urban Runoff Program
B3 Pollution Prevention Partnerships and Grants	B3 Hazardous Materials Management and Response
B4 Good Neighbor Program: Illegal Encampment Cleanup	B4 Support Volunteer Cleanup Efforts
D1 Management of Revegetation Projects	D1 Management of Riparian Planting and Invasive Plant Removal
D2 Revitalize Riparian, Upland and Wetland Habitat	D2 Revitalize Riparian, Upland and Wetland Habitat
D3 Partnerships and Grants to Restore Wildlife Habitat and Provide Access to Trails	D3 Sediment Reuse to Support Shoreline Restoration
D4 Fish Habitat and Passage Improvements	D4 Fish Habitat and Passage Improvement
D5 Ecological Data Collection and Analysis	D5 Ecological Data Collection and Analysis
D6 Creek Restoration and Stabilization	D6 Restoration of Natural Creek Functions
D7 Partnerships for the Conservation of Habitat Lands	D7 Partnerships for the Conservation of Habitat Lands
E8 Upper Guadalupe River (Flood Protection)	E8 Upper Guadalupe Flood Protection, Highway 280 to Blossom Hill Road -- San Jose

Integrated Water Resources Master Plan

The Valley Water-initiated *Integrated Water Resources Master Plan* (also known as *One Water*; Valley Water 2016) is being developed to create a long-term plan for management of County water resources based on scientific rigor, integrated watershed-scale considerations, and stakeholder engagement. The 50-year plan will integrate and incorporate the three components of Valley Water's mission: water supply, flood protection, and watershed stewardship. In so doing, *One Water* will focus on a holistic approach to various planning elements, including water supply; flood protection; water quality; open space; trails and recreation; climate change; bayfront areas; and ecological elements such as wildlife, vegetation, and fisheries.

The plan will provide a framework for measuring improvements in watershed health through science-based metrics and targets. The *One Water Framework and Coyote Watershed Plan* was completed in 2018; the complete *One Water* plan (all five watershed plans) is to be completed by 2021.

1.4.2 Stevens Creek Watershed

The Stevens Creek watershed originates in the Santa Cruz Mountains (Figure 1-2). Stevens Creek consists of approximately 20 miles of channel with several small ephemeral and perennial drainages feeding into the mainstem upstream of Stevens Creek Reservoir. The creek flows southeasterly through the Stevens Creek County Park before entering the reservoir, then continues north and empties into the Bay at Whisman Slough near Mountain View's Shoreline Park. Tributaries to Stevens Creek downstream of the reservoir include Heney Creek, which joins Stevens Creek north of Interstate 280 (I-280). When it rains,

high flows from Permanente Creek may be diverted to Stevens Creek via the Permanente Creek Diversion, a low-flow flood diversion that is a tributary to Stevens Creek on the valley floor, downstream of the reservoir. Valley Water relies on the channel between Stevens Creek Reservoir and El Camino Real to recharge the groundwater basin. The FHRP area of the Stevens Creek watershed extends downstream of the Stevens Creek Dam and upstream of the tidally-influenced section of the creek (approximately midway between Highway 101 and the Crittenden Lane pedestrian bridge).

Based on a historical ecology study completed by SFEI, the terminus of Stevens Creek was historically (mid to late nineteenth century) somewhere between El Camino Real and present-day Middlefield Road, although the downstream extent of the defined channel likely varied from year to year. The creek spread into a small wetland area, then a large area of oaks and brush. The *Lower Peninsula Watershed Stewardship Plan* confirms this historical creek formation as terminating before reaching the Bay, sinking into the coarse sediments of alluvial fans or spreading into wet meadows, marshes, and willow groves. During high winter flows, however, water would have flowed to the Bay through a network of shallow, discontinuous channels and swales (Beller et al. 2010).

By the late nineteenth century, Stevens Creek had been connected to the Bay by constructed channels. Historical accounts indicate that the connection was established between 1872 and 1876, to move runoff across the middle and lower alluvial plain. Although not specifically documented, this connection to the Bay may have been constructed by enlarging drainages, while some were completely new connections. This direct connection to the Bay significantly increased Stevens Creek's potential for use as steelhead habitat . During the same period, this area was noted as having been converted to agricultural use (Beller et al. 2010).

Stevens Creek Dam and Reservoir is one of six systems that was approved for construction by voters in 1934. It was completed in 1935. In 1985, an additional 231,000 cubic yards of material was added to the dam, raising it 10 feet. The reservoir capacity is currently 3,138 AF of water. Its surface area is 92 acres.

1.4.2.1 Fisheries Habitat

Reported historic steelhead distribution in Stevens Creek watershed is generally limited to the mainstem, as the tributaries, including Gold, Deer, Indian, and Swiss Creeks are limited by gradient (too steep over an extended length of channel) or hydrology (too dry) (Leidy et al. 2005). Systematic adult or juvenile fish surveys covering a substantial historic period have not been conducted within the Stevens Creek watershed, so accurately estimating past adult or juvenile fish abundance is difficult. Accounts and reports indicate the historic presence of a sustained steelhead run within Stevens Creek (Leidy et al. 2005). However, the potential of the watershed to support an anadromous run was reduced by construction of Stevens Creek Reservoir in 1935 (Leidy et al. 2005; Stillwater Sciences 2004). Becker et al. (2007) reported that of the approximately 8.1 stream miles suitable for the support of steelhead (spawning and rearing), only approximately 3.7 miles remain available. Steelhead do persist in Stevens Creek, below the reservoir (Leidy et al. 2005). Stevens Creek is generally thought to contain a reproducing steelhead population (SCBWMI 2001) and is reported to be one of the few remaining Santa Clara Valley-region streams to contain a viable steelhead run. However, it appears that anadromy may be limited, and the resident-trout life history strategy may be dominant (Leidy et al. 2005; Stillwater Sciences 2004). Garza and Pearse (2008a) showed genetic linkage (ancestry) to anadromous steelhead in populations both the above and below the reservoir.

Valley Water began index reach monitoring for juvenile steelhead in Stevens Creek in 2020 to document the abundance, distribution, and densities, as well as the composition of other fish species. All species collected in Stevens Creek were native to the system and included the following: three-spined stickleback (*Gasterosteus aculeatus*), California roach (*Hesperoleucus symmetricus*), Sacramento sucker (*Catostomus occidentalis*), and steelhead. Juvenile steelhead were found at all sampling sites with distributions skewed

lower in the system. The average steelhead density (fish/meter) for all monitoring stations on Stevens Creek was 0.2 fish/meter (based on the number of fish caught [n = 47]). The maximum likelihood iterative process (MLIP) indicates that the density of steelhead on Stevens Creek was likely higher than what was observed during the sampling effort (0.3 fish/meter). The size range of steelhead collected indicated production and successful summer rearing occurred, and that Stevens Creek supports multiple age classes. All stations sampled had some amount of habitat complexity in the form of undercut banks, large woody debris, root wads, emergent vegetation, boulders, or some combination thereof that could be used as refugia for steelhead. Riffle habitat capable of supporting fast-water feeding was present at all sampling stations. While the physical habitat conditions present at all sites sampled on Stevens Creek were suitable for steelhead, turbidity was elevated (Valley Water 2020a).

1.4.2.2 Overview of Operations and Water Rights

The current water rights for Stevens Creek Reservoir were licensed in 1941 (Figure 1-2). The Stevens Creek diversion entitlement is 4,000 AFY by storage collected at the reservoir from approximately December 1 to April 30 each year. Waters are held temporarily in Stevens Creek Reservoir and released at rates that provide for instream flows sufficient to support fish and aquatic habitat, recharge the Santa Clara Plain area of the Santa Clara groundwater subbasin, and supply the County-wide water distribution system. Downstream of the reservoir, water in Stevens Creek flows unimpeded through the groundwater recharge zone. No other instream dams or diversions are in this creek. Outside of permitted diversion operations, natural inflows are bypassed through the dam.

1.4.2.3 Ongoing Stevens Creek Watershed Programs and Projects

Under the SCW Program discussed above, multiple projects have been approved that specifically benefit Stevens Creek. For example, under SCW Priority D, funding was granted to Friends of the Stevens Creek Trail for a Steelhead Passage Improvement Project in 2016. Valley Water's dam safety retrofit program does not include any projects at Stevens Creek Reservoir.

1.4.3 Guadalupe River Watershed

The Guadalupe River watershed originates in headwater tributaries near the summits of Loma Prieta and Mount Umunhum in the Santa Cruz Mountains, then flows north into the mainstem Guadalupe River before draining into South San Francisco Bay through Alviso Slough. The watershed encompasses approximately 59,000 acres, with a total drainage area of approximately 170 square miles, and has five reservoirs as shown in Table 1-2 (see also Figure 1-2 and Figure 1-3).

Present-day hydrology of the Guadalupe River watershed has been significantly influenced by urbanization of the valley floor and as a result of Valley Water's water supply operations (Beller et al. 2010). Since construction of four of the reservoirs in the upper watershed in 1935 (Table 1-2), rainfall runoff is captured during winter and stored for use in dry summer months. The FHRP area is located within the four specific waterways in the Guadalupe River watershed: Calero Creek, Guadalupe Creek, Los Gatos Creek, and the Guadalupe River. All FHRP activities would occur below the associated dams and upstream of the tidally-influenced section of Guadalupe River (approximately located at the pedestrian bridge downstream of the Montague Expressway).

1.4.3.1 Guadalupe River

The Guadalupe River mainstem begins at the confluence of Guadalupe and Alamitos Creeks downstream of Almaden Lake, and flows north for 14 miles through heavily urbanized portions of the City of San Jose, eventually discharging to the Bay (Figure 1-2). Its three major tributaries are Guadalupe, Alamitos, and Los Gatos Creeks (Figure 1-2). Detailed maps of each of the major tributaries are provided in Chapter 4 *Guadalupe River Watershed (Phase 1 Measures)*.

Guadalupe River's current configuration and hydrologic connection to other upstream tributaries are attributed to fabricated changes over the last century. The first major modification of the stream channel occurred in 1866 when a canal was dug to alleviate flooding and improve conditions for rapidly expanding orchards. In 1975, construction of Almaden Expressway included widening approximately 3,000 feet of the Guadalupe Channel and relocating it eastward. The original channel was filled to allow the construction of the expressway (SCBWMI 2001). As currently configured, three tributary creeks join the Guadalupe River—Los Gatos, Ross, and Canoas Creeks—although the latter two are concrete channels that do not provide high-quality fish habitat.

The Alamitos Percolation Pond is a 13-foot-high drop structure on Guadalupe River, upstream of Blossom Hill Road, that was modified in the early 1970s and blocked steelhead access to Guadalupe, Alamitos, and Calero Creek until it was laddered in 1999.

1.4.3.2 Alamitos Creek

Alamitos Creek begins in the Santa Cruz Mountains and crosses the lower elevation foothills before reaching the valley floor. Almaden Reservoir is located on Alamitos Creek in the upper watershed. Two branches of Alamitos Creek above Almaden Reservoir, Barret Canyon and Herbert Creeks, are perennial (flow year-round). Intermittent (seasonal flow) creeks, Larrabee Gulch and Jacques Gulch, flow directly into the reservoir.

Almaden Dam diverts local rainfall runoff from upper Alamitos Creek that is then stored in Almaden Reservoir. When Almaden Dam approaches capacity, the Almaden-Calero Canal moves water from Almaden Reservoir to Calero Reservoir for optimized storage capacity. Instream flows in Alamitos Creek downstream of the dam are released from Almaden Dam for the purpose of instream recharge; flows that are not recharged eventually enter Guadalupe River.

Alamitos Creek's connection to Guadalupe River has been modified by Almaden Lake and the Alamitos Drop Structure. Almaden Lake is an on-channel pond located on Alamitos Creek in San Jose, immediately upstream of its confluence with Guadalupe Creek (Figure 1-2). The lake is an artifact of an abandoned gravel quarry that was breached by Alamitos Creek. The lake forms the centerpiece of 65-acre Almaden Lake Park, which is operated by the San Jose Parks, Recreation, and Neighborhood Services Department in cooperation with Valley Water (Valley Water 2019). The lake covers an area of approximately 32 acres with a maximum depth of 43 feet, which provides habitat for warm-water non-native fish species such as largemouth bass (*Micropterus salmoides*), sunfishes (*Lepomis* sp.), and carp (*Cyprinidae* sp.).

1.4.3.3 Calero Creek

Calero Creek originates in the eastern foothills of the Santa Cruz Mountains. Downstream of Calero Reservoir, the creek flows northwest approximately 4 miles to its confluence with Alamitos Creek. Calero Creek historically existed as broad braided channels in some reaches, including at its confluence with Alamitos Creek. Some stream reaches may have been straightened to improve drainage for agriculture in the early twentieth century.

Calero Reservoir is located in the upper watershed of Calero Creek and is the largest reservoir in the Guadalupe River watershed. Calero Reservoir receives water from multiple sources, including diversion of local rainfall runoff in Calero Creek, diversion of water from Almaden Reservoir through the Almaden-Calero Canal, imported water from the Calero Pipeline (from the Cross Valley Pipeline from Anderson Reservoir), imported water from the South Bay Aqueduct through the Central and Almaden Valley Pipelines, and imported or other local watershed supplies that are delivered to the reservoir from either the Calero Dam outlet pipe or from the Calero/Cross-Valley Pipeline that is located above the dam.

Water from Calero Reservoir is released to Calero Creek or the Almaden Valley Pipeline (delivering raw water to the Vasona Pumping Station and Rinconada Water Treatment Plant). Calero Reservoir capacity is five times larger than that of Almaden Reservoir; because it is located on the eastern side of the valley, it does not receive as much precipitation as Almaden. During heavy or prolonged winter storms, runoff from Almaden Reservoir, which has insufficient capacity to store the total runoff from its watershed, is released to Alamitos Creek or diverted to Calero Reservoir via the Almaden-Calero Canal.

1.4.3.4 Guadalupe Creek

Guadalupe Creek also originates in the Santa Cruz Mountains. Constructed in 1935, Guadalupe Reservoir impounds the channel of Guadalupe Creek (See Figure 1-2 and Figure 1-3). The primary purpose for storing winter rainfall runoff is downstream groundwater recharge through controlled releases from Guadalupe Dam. Streamflow in Guadalupe Creek from Guadalupe Reservoir that does not recharge groundwater eventually flows into Guadalupe River. Water released from the reservoir and imported water discharged from the Almaden Valley Pipeline maintain 1.65 miles of perennial stream habitat in Guadalupe Creek downstream to the upper portions of the Guadalupe River.

The Masson Diversion Dam is located on Guadalupe Creek, approximately 0.5 mile northeast of the intersection of Camden Avenue and Hicks Road in San Jose. The dam is a concrete sill that holds a removable wooden flashboard during water diversion operations, creating a barrier to upstream and downstream movement of anadromous fish. In 2000, a concrete fish ladder and steel fish screen were constructed, enabling both upstream and downstream fish passage around the dam.

A barrier to upstream and downstream movement of anadromous fish was also found adjacent to Hicks Road upstream of the Pheasant Road intersection in San Jose. The barrier was a 4-foot jump height and flat concrete channel bottom at the concrete-lined structure. In 2008, Valley Water constructed a step-pool fish ladder within the concrete channel (concrete U-frame channel fish ladder). The jump height was reduced to less than 6 inches, enabling easier upstream and downstream fish passage.

1.4.3.5 Los Gatos Creek

Los Gatos Creek originates in the Santa Cruz Mountains, and three reservoirs are located on it: Lake Elsman (owned by San Jose Water Company), Lexington, and Vasona (Figure 1-2). Local watershed runoff in Los Gatos Creek is impounded by Lenihan Dam into Lexington Reservoir. Valley Water stores local rainfall runoff at Lexington Reservoir for future water supply uses and makes routine releases from Lenihan Dam outlet instream recharge to Los Gatos Creek. Water released from Lexington Reservoir flows into Vasona Reservoir, which serves to store local surface water and regulate downstream flows into Los Gatos Creek.

Present-day conditions in the lower part of Los Gatos Creek have changed from a historical braided stream entering a marsh area at its confluence with Guadalupe River to a defined channel (Leidy et al. 2005). Substantial channel modifications have been constructed over time to enhance the creek's ability to protect against floods and function as a water supply facility, including a series of diversions, drop structures, and off-stream percolation ponds (see Chapter 4 *Guadalupe River Watershed (Phase 1 Measures)*).

1.4.3.6 Watershed Fisheries Habitat

The Guadalupe River watershed contains approximately 70 miles of perennial channel (NMFS 2016). Historic adult or juvenile fish surveys covering a substantial period have not been conducted within the Guadalupe River watershed. Therefore, accurately estimating historic adult or juvenile fish abundance is difficult (NMFS 2016). However, accounts and reports do indicate the historical presence of a sustained steelhead run within the Guadalupe River system, although the size of this run may have been somewhat limited by the arid nature of the watershed (Leidy et al. 2005). Migratory barriers currently restrict steelhead

distribution to approximately 46 miles of stream channel, limited to the mainstem Guadalupe River (formed at the confluence of Guadalupe and Alamitos Creeks) and its four main tributaries: Los Gatos, Guadalupe, Alamitos, and Calero Creeks (NMFS 2016). The upstream limits of anadromy on Los Gatos, Guadalupe, Alamitos, and Calero Creeks are the Camden Avenue Drop Structure, Guadalupe Reservoir, Almaden Reservoir, and Calero Reservoir, respectively. Significant additional barriers also exist on Los Gatos Creek upstream of the Camden Avenue Drop Structure prior to reaching Lexington Reservoir. Within the Guadalupe River system, year-round flows that sustain current steelhead distribution are primarily maintained via releases from Guadalupe, Almaden, Lexington, Vasona, and Calero Reservoirs. Over the past few years, passage conditions have been improved at several locations. For example, Valley Water modified the Alamitos Percolation Pond and installed a fish ladder in 1999. Removal of this terminal barrier on Guadalupe River and installation of a fish ladder at Masson Diversion Dam on lower Guadalupe Creek in 2000 have increased potential access to more than 18 miles of steelhead spawning and rearing habitat in Guadalupe, Calero, and Alamitos Creeks.

Valley Water has been conducting juvenile steelhead rearing monitoring in the Guadalupe River watershed since 2004 as part of the downtown Guadalupe River Project. This included index reach monitoring at 12 stations in the mainstem Guadalupe River and 8 stations in Guadalupe Creek. The monitoring was concluded in 2013, but Valley Water recommended the continuation and expansion of monitoring efforts to better understand steelhead numbers and distribution in the Guadalupe River watershed, as well as the composition of other fish species. The project's adaptive management team approved the recommendation; however, the permits did not authorize juvenile rearing monitoring at additional stations. Therefore, from 2014 to 2017 juvenile rearing monitoring continued at the original permitted stations (as flow conditions allowed) while the permits for monitoring at additional stations were acquired. The expanded monitoring effort was ultimately approved by NMFS and CDFW in 2018. At that time, juvenile rearing monitoring increased to include stations in Los Gatos, Alamitos, and Calero Creeks, and a steelhead tracking study using passive integrated transponders (PIT) was implemented.

During the most recent sampling effort in fall 2020, monitoring was conducted at 19 stations in the Guadalupe River watershed, including three on Guadalupe River, five on Guadalupe Creek, three on Los Gatos Creek, five on Alamitos Creek, and three on Calero Creek. These stations included a subset of stations where monitoring was conducted from 2004 through 2017, as well as the expanded sites selected in 2018 to provide continuity from the previous monitoring effort on Guadalupe River and Guadalupe Creek and maintain a long-term dataset. The number of sampling sites surveyed in 2020 was negatively impacted by dry conditions, the presence of homeless encampments, and the associated risk of exposure to COVID-19. Juvenile steelhead were present in Alamitos, Calero, and Guadalupe Creeks, with 24 (0.12 fish/meter), 35 (0.29 fish/meter), and 16 (0.08 fish/meter) individuals captured in each creek, respectively.

Alamitos Creek produced fish with the greatest fork-lengths, while Guadalupe and Calero Creeks supported more young-of-the-year-sized fish. Multiple age classes were present in each of these creeks and based on the size range of fish collected, production and successful summer rearing occurred. No steelhead were detected in Los Gatos Creek or Guadalupe River. Five species of native fish were captured within the watershed including riffle sculpin (only in Guadalupe Creek), prickly sculpin (*Cottus asper*), California roach (*Lavinia symmetricus*), Sacramento sucker, and steelhead. Six species of non-native fish were observed among the five systems sampled, representing less than 2% of the total number of fish captured in 2020. These included mosquitofish (*Gambusia affinis*), largemouth bass, bigscale logperch (*Percina macrolepida*), inland silverside (*Menidia beryllina*), channel catfish (*Ictalurus punctatus*), and tule perch (*Hysterocarpus traskii*). Guadalupe River and Los Gatos Creek had the highest percentage of non-native species (16.7% and 14.6%, respectively; Valley Water 2021a).

Most recently, steelhead showing migratory tendencies were recorded from December 2019 through April 2020, and steelhead from Guadalupe and Alamitos Creeks appeared to be contributing to outmigration.

The antenna arrays indicated that movement between sub-watersheds may occur, and it also appears that steelhead are potentially entering the Guadalupe River watershed from completely different watersheds (two steelhead from the Pescadero Creek watershed in San Mateo County, tagged in the Pescadero Lagoon in a separate study by CDFW, were detected by the Alamitos Creek antenna in September 2019); however, it cannot be confirmed if these fish were alive or in the gastrointestinal tract of a predatory fish or bird when the tag was detected by the array. Because the PIT tag monitoring dataset in the Guadalupe River Watershed is limited, results should be interpreted with caution. However, a more robust dataset will develop as steelhead PIT tagging continues in the watershed over the coming years (Valley Water 2021b).

Based on the available scientific literature and lack of historical evidence, it is unlikely that the Guadalupe River watershed historically supported persistent populations of Chinook salmon. While there may have been a chance Chinook salmon would have had historical access to the lower portions of the Guadalupe River each year, historical flow conditions would not have provided consistent access to the upper watershed, making potential occurrence opportunistic and rare.

Chinook salmon and other anadromous salmonids (chum salmon, pink salmon) have only been observed in Santa Clara County in the last 40 years. Genetic analysis has confirmed Chinook salmon of hatchery origin, which are supported by the watershed's altered hydrology that now has perennial flow in most years.

Although a definitive answer on the nativity of Chinook salmon in the Guadalupe River watershed cannot be made, this is the southernmost extent of the species' range, there is no substantial evidence of historical presence, historical flow conditions were not supportive, and the current population is of hatchery origin (Valley Water 2018).

1.4.3.7 Overview of Operations and Water Rights

Valley Water's water supply operations on these streams rely on nine Water Rights Licenses to divert local water sources at Guadalupe Dam, Almaden Dam, Calero Dam, Lexington Dam, Alamitos Percolation Ponds, Masson Dam, Almaden-Calero Canal, Kirk Dam, and Vasona Reservoir (Figure 1-3). Water captured under upstream water rights can be rediverted at downstream diversions.

The Valley Water surface water operations in Guadalupe River and its major tributary streams (Los Gatos, Calero, Alamitos, and Guadalupe Creeks) include five pipelines and one pump station in the Three Creeks. The Central and Snell Pipelines are located in both the Guadalupe River and Coyote Creek watersheds.

Guadalupe River receives flows from its four tributaries that have Valley Water-operated reservoirs. There are numerous offstream recharge systems, such as Alamitos and Guadalupe Ponds, just downstream of the confluence of Guadalupe and Alamitos Creeks as well as a seasonal instream dam formed by the Alamitos Drop Structure, just downstream of Almaden Lake. This structure controls flows for instream recharge and the Alamitos Diversion to the Alamitos Ponds.

1.4.3.8 Ongoing Guadalupe River Watershed Programs and Projects

Dam Safety Retrofit Program

Almaden, Calero, and Guadalupe Dams have interim storage restrictions imposed by DSOD. These operating restrictions will be in place until extensive capital improvements have been completed. The Calero, Guadalupe, and Almaden Dam Seismic Retrofit Projects are all in the planning phases. The impacts of each of these capital projects will be evaluated separately under CEQA and permitted individually. Dewatering is likely to be necessary for dam safety retrofit work and could affect Valley Water's ability to meet the proposed FAHCE Reservoir Reoperation Rule Curves, which would need to be addressed in each project's individual CEQA review.

Almaden Lake Improvement Project

As an early implementation FAHCE measure, Valley Water began planning for the Almaden Lake Improvement Project in 2012 to restore the creek channel section within Almaden Lake Park by eliminating the current condition whereby Alamitos Creek flows through the lake. Valley Water prepared a draft EIR to evaluate multiple options and their impacts on the surrounding area (Valley Water 2019). Valley Water certified the Final EIR and approved the project in May 2021 (Valley Water 2021c).

The presence of Almaden Lake creates less than ideal conditions for native fish populations. Impaired water quality, risk of entrainment, and predation pressure from non-native predatory fish species within Almaden Lake may prevent the successful migration of native migratory fish upstream or downstream through the watershed. Due to the unnaturally varied depths within the lake, and the lake's large surface area to volume ratio, surface temperatures of the lake are elevated compared to the upstream Alamitos Creek source water. These elevated seasonal water temperatures present a potential thermal impediment to anadromous fish. Additionally, during warm summer months, large algal blooms can occur in Almaden Lake. Seasonal warm temperatures extend downstream of the lake into Guadalupe River as warm water released from the lake travels downstream. The elevated temperatures and lacustrine habitat in the lake also support non-native fish species that potentially prey on steelhead and other native species. Entrainment of anadromous fish in the lake is also possible, making it difficult for steelhead and other anadromous fish to find the source stream at the upstream end of the lake. Under existing conditions, steelhead are unlikely to occur within the lake during late-spring and summer months when the lake warms and dissolved oxygen is reduced. Currently, the fish assemblage in the lake is dominated by non-native species (Valley Water 2019). Further, having Alamitos Creek flow directly into the lake allows for direct deposition of naturally-occurring mercury-laden sediment into the lake. This has resulted in the lake having mercury-related water quality issues.

To address both the fisheries and mercury issues, the project proposes to separate the creek from the lake by constructing a new levee in a north-south direction through the lake. The new levee would become the lake's new west bank boundary and isolate the lake to the east side of the park. The new levee would also serve as the restored creek's east embankment. Restoring the creek channel section would mean Alamitos Creek could flow directly into Guadalupe River as it once did prior to quarry operations.

Restoring the natural creek features at this site would improve fish passage conditions to the upper watershed, reduce water temperatures downstream of the lake, reduce predation of native fish by reducing habitat suitability for non-native predatory fish, improve transport of sediment in the creek system, and return the riparian habitat to improve the wildlife corridor as the banks and lower floodplain of the restored channel would be planted with native riparian trees and shrubs. A separated lake would remain at the park, with imported water to be used as the lake's water source (currently, Almaden Lake has no groundwater connection and is only replenished by Alamitos Creek flows, direct precipitation, and limited stormwater runoff).

Guadalupe Mitigation Monitoring Program

Fisheries and habitat monitoring are part of the mitigation and monitoring plans (MMP) for three flood protection projects on Guadalupe River. The three flood protection projects extend along Guadalupe River from South San Francisco Bay salt pond A8 to Blossom Hill Road. In addition, Guadalupe Creek from Almaden Expressway to Masson Dam was restored as mitigation for downstream project impact and is monitored as part of this program. The Guadalupe River MMP is based on adaptive management, which involves selection of indicators and measurable objectives during the planning process, measurement of indicators as part of the monitoring phase, and assessment to determine achievement of mitigation objectives during the review phase. The Guadalupe AMT, led by Valley Water, directs and implements the adaptive management process. The Guadalupe AMT representatives include technical experts from Valley

Water, U.S. Army Corps of Engineers (USACE), USFWS, NMFS, City of San Jose, San Francisco Bay RWQCB, CDFW, and Water Power Law Group representing the GCRCD, Pacific Coast Federation of Fishermen's Associations, Trout Unlimited, and Western Waters Canoe Club. The Guadalupe AMT may amend the MMP, if necessary, on the basis of the monitoring results and through a process subject to regulatory approvals. The AMT has been meeting annually for more than 20 years to review monitoring results and discuss the program.

During the development of the FHRP *Adaptive Management Program*, Valley Water reviewed the methodologies and guidelines defined in the Guadalupe River MMP; these MMP elements were modified, as appropriate, to incorporate the goals and objectives of the FHRP.

South Bay Salt Pond Restoration Project

Within the Guadalupe River watershed, an important component of the South Bay Salt Pond Restoration Project (SBSPRP) is to evaluate Pond A8 suitability for tidal marsh habitat restoration. The potential to restore the A8 pond complex (Ponds A8, A7, and A5) was questionable due to legacy mercury contamination as a result of the New Almaden mines. To assess the impact of mercury-laden sediments on fish and wildlife during the opening of the pond to tidal action, Valley Water, in partnership with the USFWS, constructed adjustable tide gates on Pond A8 to allow tidal flows to enter and exit the pond in a controlled manner.

1.4.4 Coyote Creek Watershed

The Coyote Creek watershed is the largest watershed in the County (206,000 acres, or approximately 40% of the Three Creeks watersheds). The headwaters originate on the east side of the County in the Diablo Range. The mainstem Coyote Creek is the longest creek in the County, flowing across the Santa Clara Valley floor approximately 42 miles toward the Bay. Additional information on key features of the Coyote Creek watershed, including Coyote Creek, is discussed in the following sections.

1.4.4.1 Coyote Creek

Two water supply reservoirs are owned by Valley Water on Coyote Creek: Anderson and Coyote (Figure 1-2). Anderson Reservoir, constructed in 1950, is a 235-foot-high earthen dam that measures 1,430 feet long by 900 feet wide and sits along the Coyote Creek Fault. It holds more than 90,000 AF of water when full, more than all other reservoirs in the County combined. Coyote Reservoir is a 140-foot-high, 980-foot-long, earth and rock dam built in 1936. It holds 23,244 AF of water when full, and is the second largest reservoir owned by Valley Water.

Some of the tributaries entering Coyote Creek are Fisher, Upper Silver, Lower Silver, and Upper Penitencia Creeks. Historically, the Coyote Creek drainage was highly discontinuous, supporting groundwater recharge in the valley floor. Due to urbanization over the last century, nearly half of the valley floor waterways draining into Coyote Creek are constructed channels. These channels convey runoff across areas that previously had no surface drainage (Grossinger et al. 2006). This change in drainage characteristics, combined with water supply operations developed over the last century, has significantly altered the natural creek system hydrology.

For most water years, flow in Coyote Creek is managed with local flows from Anderson Reservoir and with Central Valley Project water from the San Felipe Pipeline so that it is perennial downstream of the reservoirs. Many of the creeks draining into Coyote Creek are also perennial, but the smaller tributaries on the eastern side of the watershed are dry during summer and fall. The FHRP area in the Coyote Creek watershed extends from Anderson Dam to where Coyote Creek becomes tidally influenced, approximately 1 mile downstream of Highway 237.

1.4.4.2 Upper Penitencia Creek

Upper Penitencia Creek, the primary tributary to Coyote Creek, originates in the Diablo Range, several miles above Cherry Flat Reservoir (Figure 1-2). Deep, narrow canyons with well-developed riparian vegetation characterize the upper watershed (SCBWMI 2003). The creek flows through San Jose to join Coyote Creek approximately 9 miles downstream. Valley Water can augment flows in Upper Penitencia Creek using imported water delivered through the DWR South Bay Aqueduct to enhance instream recharge through the year, including periods when the creek would otherwise be naturally dry.

Historically, Upper Penitencia Creek did not have a hydrologic connection to the Bay until an extension to Coyote Creek was constructed in 1876 (SCBWMI 2001). The hydrologic connection to Coyote Creek likely increased the habitat potential for steelhead in Upper Penitencia Creek. For most water years, in the upper watershed portion of the creek, the combined effects of Cherry Flat Reservoir releases and groundwater discharge maintain a perennial channel and influence natural creek inflow. Conversely, in the lower watershed portion of the creek, the hydrology of the creek has been modified from historical conditions by groundwater recharge operations, flood control projects, and other channel modifications (SCBWMI 2003). Stream gage data have depicted a pattern of high winter and spring flow peaks followed by periods of drastically lower, stable flows (typically less than 1 cubic foot per second [cfs]) throughout summer and early fall (SCVURPPP 2006). Current studies, as discussed below in *Coyote Creek Watershed Water Supply Study*, are looking at the feasibility of, among other opportunities, phasing out use of Upper Penitencia Creek water for recharge to stabilize the flow regime.

1.4.4.3 Cherry Flat Reservoir

Cherry Flat Reservoir (Figure 1-2), built in 1932 for flood control, water conservation, and livestock watering (SCBWMI 2003), is located on Upper Penitencia Creek and has an as-built storage capacity of 500 AF. The reservoir is owned and operated by the City of San Jose (ICF 2012). The upper part of the drainage area above Cherry Flat Reservoir is 2.41 square miles of undeveloped private ranch land used for livestock grazing (SCBWMI 2003).

The reservoir was originally built for water use within the park (SCBWMI 2001, 2003). Forty years after construction, Alum Rock Park began using municipal water supply, and the reservoir is now used primarily when additional flows are needed to maintain perennial flow in the main channel of Upper Penitencia Creek (Stillwater Sciences 2006). Periodic flow augmentation downstream of Cherry Flat Dam is believed to have increased the extent and duration of wetted habitat in Alum Rock Park during summer. Regular releases from the dam are not required in most years due to the contribution of natural springs near the dam and the perennial flow from Arroyo Aguague (Stillwater Sciences 2006).

1.4.4.4 Watershed Fisheries Habitat

Coyote Creek historically supported a perennial stretch downstream of the current location of Anderson Dam. Habitat for steelhead/rainbow trout existed in the perennial, shaded reaches of the upper watershed, such as San Felipe Creek. Reliable habitat for salmonids, except as a migration corridor for juvenile and adult fish, would not have been anticipated in the braided reaches of Coyote Creek along the valley floor due to its intermittent flows and limited riparian cover (Grossinger et al. 2006).

Sporadic surveys conducted between 1898 and the present indicate that steelhead/rainbow trout were once abundant in the Coyote Creek system, occurring within the Coyote Creek mainstem as well as 13 tributary streams (Leidy et al. 2005). Complete passage barriers at Coyote and Anderson Reservoirs are estimated based on the intrinsic potential model to block passage to approximately 56% of the watershed (collectively), and anadromy has been eliminated by watershed development in all but one of the below-dam subbasins (Upper Penitencia Creek; Leidy et al. 2005).

Summer or fall investigations into the distribution and abundance of steelhead had not been conducted for decades on Coyote Creek in the reach between Anderson Reservoir and Metcalf Pond until electrofishing was conducted between Anderson Reservoir and Ogier Ponds in September and November 2014 (Leicester and Smith 2014). Despite dry conditions in 2014, and the substantial reduction in releases to the stream after early February, presence of rearing young of the year indicated that adult steelhead accessed and spawned in the reach between Ogier Ponds and Anderson Reservoir. The streambed dried downstream of Ogier Ponds by late June. Young-of-the-year steelhead were captured at all three sample sites in both September and November, and despite warm late-summer water conditions, they were large enough to smolt and emigrate by spring 2015, especially with good conditions for growth in most of winter and spring 2015 (Smith 2020a). However, when winter and spring conditions are extremely dry, such as documented in 2014–2015, stream connectivity is not restored and adult and smolt migration is not possible. When wet conditions are present, such as those documented in 2019, stream flow conditions are good for potential adult and smolt migration in winter and spring (Smith 2020a). Annual sampling was implemented by Valley Water in 2018–2019, and a fish rescue associated with the Federal Regulatory Energy Commission Ordered Compliance Project to draw down Anderson Dam. Sampling conducted by Valley Water indicates juvenile steelhead were present in Coyote Creek, the numbers were low and distribution through the system was limited. Five native species were detected during this effort: Hitch, prickly sculpin, Sacramento sucker, three-spined stickleback, and steelhead. An additional four non-native species were observed: Inland silverside, mosquitofish, largemouth bass, and bluegill (Valley Water 2021d).

Information on historical fish species composition and distribution in Upper Penitencia Creek is limited. However, it is generally thought that Upper Penitencia Creek is currently the main producer of steelhead for the Coyote Creek basin (Stillwater Sciences 2006).

Stream habitat conditions have been assessed and fish sampling has been conducted in Upper Penitencia Creek annually since 2007 (Smith 2020) and from 2019 to 2020 by Valley Water (Valley Water 2020b). steelhead were observed in some capacity during all monitoring years. Data suggests that multiple age classes are present and summer rearing is successful in most years. Native fish include riffle sculpin, Sacramento sucker, and California roach. Non-native fish presence is typically low (Smith 2020a; Smith 2020b; Valley Water 2020b). Upper Penitencia Creek contains two functionally different rearing habitats: 1) the foothills reach, mostly within Alum Rock Park, and 2) a low-gradient valley floor reach. The foothill reach receives most of its summer and fall stream flow from natural runoff, including numerous mineral springs, as well as from small spring-fall releases from Cherry Flat Reservoir, a small (less than 500-acre-foot) headwater reservoir, whereas the valley floor reach often receives imported water as a result of off-channel percolation pond overflow. Since at least the 1980s, Upper Penitencia Creek has usually supported both resident rainbow trout and their anadromous form, steelhead (Smith 2020b).

Over time and as the valley floor saw increased development, increased channel connections were created that likely improved migration or access potential for steelhead (Grossinger et al. 2006). For example, it is possible that the creation of the Penitencia Creek diversion into Coyote Creek created the corridor for steelhead to move into the high-quality habitat on Upper Penitencia Creek, which would have resulted in an improved resource for steelhead (Grossinger et al. 2006).

Chinook salmon and other anadromous salmonids (chum salmon, pink salmon) have only been observed in Santa Clara County in the last 40 years. Genetic analysis has confirmed Chinook salmon of hatchery origin, which are supported by the watershed's altered hydrology that now has perennial flow in most years. Although a definitive answer on the nativity of Chinook salmon in Coyote Creek watershed cannot be made, this is the southernmost extent of the species' range, there is no substantial evidence of historical presence, historical flow conditions were not supportive, and the current population is of hatchery origin (Garza and Pearse 2008b; Valley Water 2018).

1.4.4.5 Overview of Operations and Water Rights

Coyote and Anderson Reservoirs (Figure 1-2 and Figure 1-3), located in the upper reaches of the mainstem of Coyote Creek, have a combined capacity of 113,597 AF (Coyote Reservoir is 23,224 AF, and Anderson Reservoir is 90,373 AF), with 20,000 AF of combined emergency storage. These reservoirs have been historically operated to store local and imported water. For both facilities, during the winter diversion period, water is captured in excess of release to maximize storage on April 30. Re-diversion occurs at the Coyote Percolation Pond.

Coyote Reservoir provides local water to Anderson Reservoir. Anderson Reservoir provides local water supply for instream and offstream groundwater recharge, and supplies the County-wide distribution system. Water stored in either facility through April 30 is available for release during summer to meet water supply needs and provide storage volume for the next diversion period. Imported water is typically supplied to Anderson Reservoir during summer.

1.4.4.6 Ongoing Coyote Watershed Programs and Projects

Dam Safety Retrofit Program

As noted in Section 1.3.1 *Dam Safety Operations Restrictions*, Anderson and Coyote Dams are subject to dam safety restrictions imposed by DSOD, and Anderson Dam is subject to additional safety restrictions imposed by FERC. To address dam safety risks, the FERC Order Compliance Project is being implemented (Valley Water 2020c), and the ADSRP is proposed (Valley Water 2021e). Conservation measures are being developed as part of the ADSRP Section 7 consultation process.

Coyote Creek Watershed Water Supply Study

The *Coyote Creek Watershed Water Supply Study* covers planning for future water supply investments that will maintain or improve groundwater recharge operation in the Coyote Creek watershed consistent with the 2012 *Water Supply and Infrastructure Master Plan* and the FHRP biological goals and objectives. The study will include seeking a balance to these objectives by examining the feasibility of phasing out the use of Upper Penitencia Creek for recharge with imported water. Other opportunities to be addressed in the plan are streamlined operations in the Upper Penitencia Recharge System and Anderson Reservoir reoperations to manage lowpoint occurrences at San Luis Reservoir.

1.5 Organization of Plan

This FHRP is organized as follows:

Chapter 1: *Introduction* – This chapter provides a brief background of Valley Water, and the scope and purposes of the FAHCE and resultant Settlement Agreement. An overview of the intent of the FHRP and the geographic coverage of the project is also part of this chapter. This chapter provides a matrix with current status of Phase 1 actions identified in the Settlement Agreement and where discussion of each will occur in the FHRP materials. Finally, this chapter provides overviews of each of the Three Creek watersheds, along with outlines of operations and other ongoing project and programs.

Chapter 2: *Three Creeks Objectives and Common Elements* – This chapter reviews the overall management objectives for the Three Creeks and describes the studies and methodologies that have and will continue to be used to describe existing conditions within each of the watersheds. It outlines the restoration elements covered in this FHRP, including Reservoir Reoperation Rule Curves, fish passage barrier remediation, and spawning and rearing habitat improvements. In addition, this chapter provides an overview of other future potential enhancement elements common to the Three Creeks, including actions to improve geomorphic functions and assessment of the feasibility of using recycled or other urban water.

Chapter 1 – Introduction

Chapter 3: *Stevens Creek Watershed (Phase 1 Measures)* – This chapter describes the FAHCE objectives for the Stevens Creek watershed, along with specific and programmatic actions to be implemented, such as Reservoir Reoperation Rule Curves, maintenance, and capital improvements that will be implemented to improve fish aquatic habitat.

Chapter 4: *Guadalupe River Watershed (Phase 1 Measures)* – This chapter describes the FAHCE objectives for the Guadalupe River watershed, along with specific and programmatic actions to be implemented, including Reservoir Reoperation Rule Curves, maintenance, and capital improvements that will be implemented to improve fish aquatic habitat.

Chapter 5: *Coyote Creek Watershed (Phase 1 Measures)* – This chapter describes the FAHCE objectives for the Coyote Creek watershed, along with specific and programmatic actions to be implemented, including Reservoir Reoperation Rule Curves, maintenance, and capital improvements that will be implemented to improve fish aquatic habitat.

Chapter 6: *Adaptive Management Program* – This chapter describes the FAHCE adaptive management goals, approach, monitoring, and procedures to be applied to actions described in the Settlement Agreement. The AMT composition, charter, and reporting procedures are also described. Phases 2 and 3 actions are also discussed in this chapter, as part of the AMP. This chapter also details the administrative requirements associated with implementation, the costs of implementation, funding, and an implementation schedule.

Chapter 7: *References*

Technical Appendices:

- Appendix A: Settlement Agreement
- Appendix B: Documentation of Completed Settlement Agreement Obligations
- Appendix C: Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020

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Chapter 2 – Three Creeks Objectives and Common Elements

This chapter describes the beneficial uses of the Three Creeks to be protected, provides common management objectives, and describes the range of measures that are included in the Settlement Agreement and this FHRP. The section also describes those studies that are being used to assess existing conditions in the FHRP area.

This chapter introduces the types of modifications (measures) proposed for Valley Water's water supply operations, as well as the range of infrastructure and stream enhancements intended to improve steelhead and Chinook salmon habitat in the Three Creeks. These measures are intended to provide instream flows and improve habitat conditions to meet the overall management objectives outlined in the Settlement Agreement. Watershed-specific management objectives and details of measures are presented in each of the Three Creeks chapters (Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*).

A table of all measures identified in the Settlement Agreement was provided in Chapter 1 (Table 1-1 *Status of Settlement Agreement Measures*). Measures that are common across the Three Creeks and have no watershed-specific elements are discussed in this chapter. This chapter also provides general background information common to all Three Creeks and an overview of methodologies used in development of the watershed-specific measures that are detailed in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

2.1 Beneficial Uses to be Protected

A water right is a legal entitlement authorizing water to be diverted from a specified source and put to beneficial, non-wasteful use. Water rights are property rights, but their holders do not own the water itself; rather, they possess the right to use it. In California, the SWRCB is responsible for the protection of resources such as fisheries, wildlife, aesthetics, and navigation, which are held in trust for the public. The SWRCB must consider its public trust responsibilities in balancing all purposes of uses of water, in accordance with the Water Rights Mission Statement and California Water Code § 1253. The purposes of uses of water, pertaining to water rights, are defined in the California Code of Regulations (CCR) § 659–672 to include: domestic, irrigation, power, municipal, mining, industrial, fish and wildlife preservation and enhancement, aquaculture, recreational, stockwatering, water quality, frost protection, and heat control.

Valley Water manages groundwater and provides comprehensive water management pursuant to the Santa Clara Valley Water District Act[4] (District Act), which was approved by the California Legislature and incorporated into Chapter 60 of the California Water Code Appendix. Valley Water operations have supported conjunctive use for decades, utilizing imported and local surface water to supplement groundwater and maintain reliability in dry years. Valley Water employs conjunctive use to protect local subbasins from overdraft and land subsidence, prevent saltwater intrusion, and provide critical groundwater storage reserves for use during drought or emergency outages. Figure 1-2. *FHRP Area and Valley Water's Water Supply Facilities,* provides a high-level view of Valley Water's water supply network.

One of the purposes of the FHRP is to support the petitions for 15 water rights[5] held by Valley Water on the Three Creeks. With the intention of resolving the 1996 administrative complaint filed by the GCRCD before the SWRCB, and in alignment with the Settlement Agreement initialed by the Initialing Parties in 2003, Valley Water submitted petitions to the SWRCB, Division of Water Rights in May 2015, requesting that its Three Creeks Water Rights Licenses be amended to add "fish and wildlife preservation and enhancement" to the purpose of use. In doing so, Valley Water intends to modify its current operations to ensure it

[4] http://www.valleywater.org/About/DistrictAct.aspx

[5] Ten water right petitions for change are associated with the Stevens Creek and Guadalupe River watersheds. Five water right petitions for change are associated with the Coyote Creek watershed, and will be resubmitted in conjunction with the Anderson Dam Seismic Retrofit Project EIR.

maintains and protects the purpose of uses of Valley Water's diversions of Three Creeks water. It is anticipated these measures will be incorporated into the SWRCB WROs. Table 2-1 lists the 15 WROs by watershed and provides the proposed Purpose of Use, as well as references to those sections in the Settlement Agreement's Phase 1 measures that correspond with that specific WRO. The sections of the Settlement Agreement that speak to measures that are common to all watersheds (measures identified in § 6.2.4) are not referenced in this table, but they are discussed in Section 1.2.2 *Fish Habitat Restoration Plan – Required Elements of the Settlement Agreement*.

Table 2-1. Valley Water's Water Right Orders

Application Number	Priority Date	Valley Water Facility	Water Source	Proposed Purpose of Use	FAHCE Settlement Agreement Section Reference(s)
Stevens Creek Watershed					
7143	12/09/1931	Stevens Creek Reservoir	Stevens Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.5.1.1, 6.5.2
Guadalupe River Watershed					
5653	08/01/1927	Alamitos Percolation Ponds	Guadalupe River	Municipal, Fish and Wildlife Preservation and Enhancement	§ 6.6.1.1 (A, D)
7142	12/09/1931	Guadalupe Reservoir	Guadalupe Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (A, D), 6.6.2.1.1, 6.6.2.1.2.1, 6.6.2.1.2.2
9455	11/16/1938	Masson Dam	Guadalupe Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (A, D), 6.6.2.1.2.2
7141	12/09/1931	Almaden Reservoir	Alamitos Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (B, D), 6.6.2.1.3.1, 6.6.2.1.3.2, 6.6.2.1.3.3
8099	09/11/1934	Almaden-Calero Canal	Alamitos Creek	Municipal, Fish and Wildlife Preservation and Enhancement	
8098	09/11/1934	Calero Reservoir	Calero Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (B, D), 6.6.2.1.1, 6.6.2.1.4
5654	08/01/1927	Kirk Dam	Los Gatos Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§ 6.6.1.1 (C, D)
8387	07/10/1935	Vasona Reservoir	Los Gatos Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (C, D), 6.6.2.1.5
11751	03/03/1947	Lexington Reservoir	Los Gatos Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.6.1.1 (C, D), 6.6.2.1.5

Application Number	Priority Date	Valley Water Facility	Water Source	Proposed Purpose of Use	FAHCE Settlement Agreement Section Reference(s)
Coyote Creek Watershed					
7140	12/09/1931	Coyote Reservoir	Coyote Creek	Municipal, Minor Industrial, Fish and Wildlife Preservation and Enhancement	§§ 6.4.2.1.1 (B), 6.4.2.1.5
8388	07/10/1935	Coyote Percolation Pond	Coyote Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.4.2.1.1 (D), 6.4.2.1.3 (B)
13016	04/04/1939	Anderson Reservoir (combined with Application #21128)	Coyote Creek	Municipal, Industrial, Incidental Power, Fish and Wildlife Preservation and Enhancement	§§ 6.4.1.1, 6.4.2.1.1(A–C), 6.4.2.1.2 (B), 6.4.2.1.3 (A), 6.4.2.1.5
21128	01/21/1963	Anderson Reservoir (combined with Application #13016)	Coyote Creek	Municipal, Industrial, Incidental Power, Fish and Wildlife Preservation and Enhancement	§§ 6.4.1.1, 6.4.2.1.1(A–C), 6.4.2.1.2 (B), 6.4.2.1.3 (A), 6.4.2.1.5
11010	03/20/1945	Penitencia Percolation Ponds	Upper Penitencia Creek	Municipal, Fish and Wildlife Preservation and Enhancement	§§ 6.4.1.1, 6.4.2.1.2, 6.4.2.1.4

The Settlement Agreement includes maintaining all beneficial uses as one of the elements common to the Three Creeks. Settlement Agreement § 6.2.1, *Beneficial Uses*, states that it:

> …commits SCVWD [Santa Clara Valley Water District] and other Parties to a program of measures intended to restore and maintain fisheries, wildlife, water quality and other beneficial uses of the Three Creeks in good condition.

2.2 FHRP Management Objectives

The FHRP was developed using the Settlement Agreement Overall Management Objectives (Settlement Agreement § 6.2.2) as the foundation for determining implementation strategies, as well as for defining future monitoring and a framework for an AMP. As stated in the Settlement Agreement, implementation of the FHRP measures, along with a monitoring and adaptive management plan are intended to:

> …restore and maintain healthy steelhead trout and salmon populations as appropriate in each of the Three Creeks by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

"As appropriate" in the Settlement Agreement means that Valley Water's implementation of restoration measures must be:

- tailored to each of the watersheds, including providing suitable habitat for specific species and life stages in each creek per the watershed-specific management objectives (see Chapter 3 *Stevens*

Creek Watershed (Phase 1 Measures) through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*); and

- consistent with the objectives set forth by the District Act, including providing sufficient water for all beneficial uses in the County (see discussion in Section 2.1 *Beneficial Uses to be Protected*). The Settlement Agreement:
  …commits Valley Water and other Parties to a program of measures intended to restore and maintain fisheries, wildlife, water quality, and other beneficial uses of the Three Creeks in good condition. (§ 6.2.1)

The fundamental FHRP objectives are listed below and are intended to be implemented together, in a balanced manner. As in the Settlement Agreement, all Three Creeks objectives are included here. Objectives 1, 2, and 3 are subject to Phase 1, 2, and 3 funding obligations and limitations specified in Settlement Agreement Article VIII, Appendices C and D. Objective 4 is fundamental to Valley Water and consistent with the District Act.

Objective 1: Restore and maintain a healthy steelhead population in the Stevens Creek watershed, by providing:

- suitable spawning and rearing habitat below Stevens Creek Dam within a cold-water management zone (CWMZ) determined on an annual basis through the development of an operations plan (Settlement Agreement § 6.5.1.1);
- adequate passage for adult steelhead to reach suitable spawning and rearing habitat, and for outmigration of juveniles (Settlement Agreement § 6.5.1.1); and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP (Settlement Agreement §§ 6.5.1.2 and 6.5.1.3).

Objective 2: Restore and maintain a healthy steelhead and Chinook salmon population in the Coyote Creek watershed, by providing:

- approximately 5 miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek (Settlement Agreement § 6.4.1.1);
- adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles (Settlement Agreement § 6.4.1.1); and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP (Settlement Agreement §§ 6.4.1.2 and 6.4.1.3).

Objective 3: Restore and maintain healthy steelhead and Chinook salmon populations in the Guadalupe River watershed, by providing:

- suitable spawning and rearing habitat for steelhead and Chinook salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River (Settlement Agreement § 6.6.1.1);
- suitable spawning and rearing habitat for Chinook salmon below Calero and Almaden Dams to their confluence with Lake Almaden (Settlement Agreement § 6.6.1.1);
- suitable spawning and rearing habitat for Chinook salmon in Los Gatos Creek from Camden Avenue to its confluence with Guadalupe River (Settlement Agreement § 6.6.1.1);
- adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat, and for outmigration of juveniles (Settlement Agreement § 6.6.1.1); and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP (Settlement Agreement §§ 6.6.1.2 and 6.6.1.3).

Objective 4: Maintain flexible and reliable current and future water supply and water deliveries for municipalities, industries, agriculture, and the environment in a practical, cost-effective, and environmentally sensitive manner so that sufficient water is available for any present or future beneficial use, including, but not limited to, the acquisition, storage (including surface and underground storage), and distribution of water for irrigation, domestic, fire protection, land subsidence prevention, municipal, commercial, industrial, and environmental purposes (see District Act § 5.5).

Watershed-specific management objectives are also discussed in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, dependent on watershed.

2.3 Three Creeks Common Elements

2.3.1 Instream Operations

This section describes other measures to improve instream flow management from sources other than reservoir operations that may also be implemented in the Three Creeks (see Settlement Agreement § 6.2.3). These measures may include instream diversion flow reoperations, screening of recharge ponds, and other upgrades that would enhance operational flexibility.

With reference to the Overall Management Objectives described in Section 2.2 *FHRP Management Objectives*, Settlement Agreement § 6.2.3 states:

> SCVWD will store, divert, and redivert water in a manner that is consistent with the Overall Management Objectives set forth in paragraph 6.2.2.

2.3.1.1 Diversions

Current Valley Water facilities on the Guadalupe River and Guadalupe, Los Gatos, Coyote, and Upper Penitencia Creeks divert local water supplies and/or redivert releases of water stored in reservoirs. These diversions are adjustable dams fitted with steel or wood flashboards or instream inflatable dams. Diversions are operated as specified under provision of CDFW LSAAs. These agreements contain several provisions for operating diversions to support fish passage through a diversion structure so that the stream or fish ladder has adequate flow for fish passage. Ensuring that diversion operations support fish passage is a key element of the FHRP.

Valley Water facility upgrades that would provide adaptability and flexibility in instream operations are proposed generally to uphold the objectives discussed in Section 2.2 *FHRP Management Objectives*.

2.3.1.2 Recharge Pond Screening

Passive screens would be installed and routinely maintained where overflows from recharge basins occur. Screens would be designed to preclude passage of juveniles and adults of typical non-native species in recharge ponds (bullfrogs, bass, sunfish, and similar species). Wherever possible, this work would be combined with other capital or maintenance activities at the ponds.

2.3.2 Reservoir Reoperation Rule Curves

During the FAHCE process, the TAC developed a series of Reservoir Reoperation Rule Curves that describe planned changes to the release of impounded water from Valley Water reservoirs in the Three Creeks to support the life-cycle needs of steelhead and Chinook salmon. These rule curve parameters form a central element of the Settlement Agreement, identifying seasonal peak flows to facilitate passage of upmigrating adult steelhead and outmigrating steelhead smolts, and to provide instream flows and maintain water temperature suitable for juvenile rearing. The detailed FAHCE TAC rule curves are included with this document as Appendix A *Settlement Agreement, Appendix E Reservoir Reoperation Rule Curves*.

As described in Settlement Agreement Article VI, § 6.2.4.1:

> Unless modified under paragraph 6.3, SCVWD will make reservoir flood releases, fisheries passage releases, and other planned (non-Emergency) operations changes using the criteria described in Appendix E.

Paragraph 6.3 in the Settlement Agreement provides a list of allowable modifications to the new flow curves in case of an emergency.

A general description of Reservoir Reoperation Rule Curves and flow ramping are presented in the following sections. Rule curves specific to each reservoir are provided in watershed-specific discussions in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

2.3.2.1 Development Process and Intent of Rule Curves

Operation of each reservoir is governed by rule curves developed to achieve specific purposes (for example, domestic and/or irrigation water supply) for that reservoir. The Reservoir Reoperation Rule Curves were developed to add operational criteria that benefit steelhead and, in the cases of Coyote Creek and Guadalupe River also Chinook salmon, by providing winter base flows, pulse flows, and summer base flows to support each life stage, as well as providing a framework for ramping flows and reservoir operations under low-flow conditions. Each type of flow is briefly described below.

The rules were developed by the stakeholders (Consensus Committee and TAC) to govern a Three Creeks reservoir release rate based on that reservoir's storage volume on a specific date. These graduated rule curves were calculated so that the minimum release rate for each type of release could be met in 90% of historic water year conditions. That is, the calculations used to determine the rule curves assumed that the reservoir storage volume would be at least that documented in 90% of all water years on record for each reservoir. The number of years in the historic record for each Valley Water-managed reservoir is at least 30. This does not mean that flow management is guaranteed in 90% of all years; rather, the rule curves for each reservoir were developed to meet flow-based obligations based on 90% of all water years in the dataset used for developing the rule curves.

2.3.2.2 Winter Base Flow Releases

Winter base flows are reservoir releases, made between November 1 and April 30, to improve winter and spring habitat for salmonids. Winter base flows combined with stormwater runoff provide flow cues to immigrating salmonids. Winter base flows would be managed according to the reservoir-specific rule curves provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, dependent on watershed, as excerpted from Appendix E of the Settlement Agreement (Appendix A *Settlement Agreement, Appendix E Reservoir Reoperation Rule Curves*). Higher reservoir storage volume would allow for increased reservoir releases, up to the maximum Reservoir Reoperation Rule Curve for that reservoir. Increased flow releases would not be made until there was adequate storage above a given curve to allow for 5 days of releases at a higher release rate. Winter base flow releases apply to six stream reaches:

- Stevens Creek Dam to Moffett Boulevard (Stevens Creek watershed)
- Calero Main Dam to Alamitos Diversion (Guadalupe River watershed)
- Almaden Dam to Alamitos Diversion (Guadalupe River watershed)
- Guadalupe Dam to Masson Diversion (Guadalupe River watershed)
- Camden Drop Structure to Los Gatos Creek (Guadalupe River watershed)
- Anderson Dam to Ford Road (Coyote Creek watershed)

2.3.2.3 Spring Pulse Flow Releases

Pulse flows to improve passage conditions for migrating steelhead and juvenile Chinook salmon are proposed as part of this FHRP. Pulse flows are reservoir releases of 50 cfs for a period of 5 consecutive days made between February 1 and April 30. Upstream passage for adult steelhead would be enhanced by providing a greater volume of water over potential impediments or natural critical riffles. These short-term pulse events would also benefit emigrating juveniles by flushing them downstream from the upper watershed, aiding them in their migration to the Bay and ultimately to the ocean.

Pulse flow releases would be provided in accordance with Reservoir Reoperation Rule Curves and would be triggered when a reservoir's storage volume reached approximately 75 to 85% of its storage capacity. Such conditions are probable in average-to-wet water years, or approximately 50% of the time. Pulse flows would not be made in any creek that has had two or more periods of streamflow, including flood releases and spill events that exceeded 50 cfs for two or more 5-day periods between February 1 and April 30 of any one water year. Pulse flows would not be made from Lexington or Coyote Reservoirs. Pulses from Lexington Reservoir would be muted downstream by other reservoirs, and pulses from Coyote Reservoir would have no impact on Coyote Creek because of its location above Anderson Reservoir.

2.3.2.4 Summer Base Flow Releases

Summer base flows would be made between May 1 and October 31, based on each reservoir's reoperation rule curve (see Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*), to enhance summer rearing conditions.

Below Stevens Creek, Guadalupe, and Anderson Reservoirs, Valley Water would provide specified water temperatures throughout as much of the designated CWMZs as cold-water storage allows to provide over-summer refugia for rearing steelhead. Although the Reservoir Reoperation Rule Curves for these reservoirs are designed to maintain cold-water storage availability for summer flow releases, the extent of the zones where cold-water is provided may vary by year, depending on cold-water pool volume. Between April 15 and April 30 of each year, Valley Water would survey each reservoir located upstream of a CWMZ to determine the volume of the hypolimnion that is at or below 14 degrees Celsius (°C) (15°C at Stevens Creek). Based on this information, Valley Water would determine the appropriate reservoir release rates to maximize the extent of the CWMZs through October 31. If required, additional reservoir temperature profiles may be made monthly from June through October to aid in determining cold-water releases.

2.3.2.5 Flow Ramping

Flow ramping is used to manage changes in flow volumes to minimize impacts on aquatic species. Flow ramping manages changes in the rate of water flow in a slow, stepwise fashion, helping fish and other aquatic life avoid stranding.

Flows that are under Valley Water control would be reduced in specified increments over a defined period in accordance with the discharge rating curves that would be used to determine ramping schedules at each reservoir. Ramping would be applied to reservoir releases, pulse flow releases, and controlled releases from pipelines and diversion dams. Flow ramping would apply only to flows within Valley Water control; inflow to the stream from uncontrolled events such as natural runoff or reservoir spillway flows would not be subject to the ramping provisions.

When ramping is needed, Valley Water would use one of two protocols to ramp reservoir releases, depending on whether the original flow is more or less than 50 cfs. These protocols are included in Appendix A *Settlement Agreement Appendix E Reservoir Reoperation Rule Curves*.

2.3.3 Fish Passage Barrier Remediation

Removal of remaining major passage barriers in the Three Creeks, combined with appropriate maintenance of remaining passage structures, is a goal of this element of the FHRP. This would enhance fish passage, enabling access to suitable spawning and rearing habitat as discussed in the following sections.

Settlement Agreement §§ 6.4 through 6.6 present specific barrier removal projects to enhance fish passage; these are listed here and described in more detail in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

In addition, Settlement Agreement § 6.2.4.2 provides that with the support of the Initialing Parties, Valley Water will make reasonable best efforts to ensure that other passage barriers not specifically listed in the Settlement Agreement are identified, and if necessary, remediated. As to these other barriers, § 6.2.4.2 provides that:

> At a minimum, pursuant to the adaptive management program of Article VII, the Parties will periodically evaluate and determine whether such barriers interfere with the timely achievement of the management objectives for each creek.

Therefore, Chapter 6 *Adaptive Management Program* also describes how Valley Water would implement continuing efforts to improve fish passage as part of the AMP.

2.3.3.1 Priority Barriers Included in this FHRP

Eighteen physical barriers to fish passage were identified in Settlement Agreement §§ 6.4, 6.5, and 6.6 as priority locations for remediation measures. Those barriers identified in the Settlement Agreement for removal or passage improvement that have not yet been remediated are shown in Table 2-2; site details for these measures and watershed-specific barrier maps are provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*. Barriers that were identified in the Settlement Agreement that have been remediated in advance of this FHRP are listed in Table 2-3; details on completed remediation actions at these locations are provided in Appendix B, *Documentation of Completed Settlement Agreement Obligations*.

Table 2-2. Priority Barriers Identified in the Settlement Agreement and Included in FHRP Actions

Watershed/Creek	Settlement Agreement Reference	Barrier Name	Ownership	Valley Water Role
Stevens Creek Watershed				
Stevens Creek	§6.5.2.2 (A)	Moffett Fish Ladder	Valley Water	Lead
Stevens Creek	§6.5.2.2 (A)	Fremont Fish Ladder	Valley Water	Lead
Guadalupe River Watershed				
Pheasant Creek	§6.6.2.1.2.2	Pheasant Creek Culvert	Unknown	Partial Funding
Guadalupe Creek	§6.6.2.1.2.2	Old Dam	Private	Partial Funding
Alamitos Creek	§6.6.2.1.3.2	(Bertram Road) Drop Structure	Private	Partial Funding

Watershed/Creek	Settlement Agreement Reference	Barrier Name	Ownership	Valley Water Role
Coyote Creek Watershed				
Upper Penitencia Creek	§6.4.2.1.2 (B)	Unscreened Water Diversion (GB15)	Santa Clara County	Partial Funding
Coyote Creek	§6.4.2.1.2 (B)	Ogier Road Quarry Pond Complex	Santa Clara County	Partial Funding
Coyote Creek	§6.4.2.1.2 (B)	Singleton Road Low-flow Crossing	City of San Jose	Partial Funding

Table 2-3. Priority Barriers Identified in the Settlement Agreement and Remediated Prior to FHRP Implementation

Watershed/Creek	Settlement Agreement Reference	Barrier Name	Ownership	Valley Water Role
Stevens Creek Watershed				
Stevens Creek	§6.5.2.2 (A)	Evelyn Fish Ladder	Valley Water	Lead
Stevens Creek	§6.5.2.2 (A)	Stream Gage 35	Valley Water	Lead
Stevens Creek	§6.5.2.2 (B)	Blackberry Farms Road Crossing	City of Cupertino	Partial Funding
Stevens Creek	§6.5.2.2 (B)	Blackberry Farms Irrigation Diversion	City of Cupertino	Partial Funding
Guadalupe River Watershed				
Guadalupe River	§6.6.2.1.1 (A)	Alamitos Drop Structure	Valley Water	Lead
Guadalupe River	§6.6.2.1.1 (A)	St. John Street Gage Weir	Valley Water	Lead
Guadalupe River	§6.6.2.1.1 (B)	Hillsdale Avenue Bridge	City of San Jose	Partial Funding
Guadalupe River	§6.6.2.1.1 (B)	SJWC Low-flow Crossing	San Jose Water Company	Partial Funding
Coyote Creek Watershed				
Upper Penitencia Creek	§6.4.2.1.2 (A)	Upper Penitencia Mabury/Overfelt Recharge Pond Diversion	Valley Water	Lead
Upper Penitencia Creek	§6.4.2.1.2 (A)	Penitencia Recharge Pond Diversion	Valley Water	Lead

Per the Settlement Agreement, in cases where Valley Water owns the facility, barriers would be remediated by improving fish passage, either by constructing a fish ladder or by removing the barrier. Where the facility is owned by another entity, Valley Water would undertake reasonable best efforts to assist the owner of the facility in removing or remediating the passage barrier. If the owner of facility agrees to work with Valley Water to remove or remediate the passage barrier, Valley Water would provide up to 50% of the cost to remediate the barrier as well as undertake reasonable best efforts to assist the facility owner in securing any necessary additional funding for the remediation.

2.3.4 Spawning and Rearing Habitat Improvements

Spawning habitat includes areas where eggs are deposited and fertilized, and where gravel emergence occurs. Rearing habitat is defined as areas where juvenile fish take up residence during some stage of development and utilize the area for feeding, shelter, and growth.

Per Settlement Agreement § 6.2.4.3, in Phase 1, Valley Water, in cooperation with CDFW and NMFS, will develop and implement a plan that would:

> …specify techniques, locations, and implementation schedules to enhance spawning and rearing habitats for steelhead trout and Chinook salmon in the Three Creeks.

Ongoing evaluation of the potential impacts on instream habitat associated with implementation of the Reservoir Reoperation Rule Curves, along with future monitoring efforts, would allow Valley Water to identify specific measures, locations, timing, and monitoring of spawning and rearing habitat improvements. Settlement Agreement § 6.2.4.3.1 called for a program to be implemented in Phase 1 for placement of gravel to enhance existing spawning habitat, including identification of existing habitat that is suitable for spawning but does not contain adequate spawning gravel. To meet the intent of the Settlement Agreement, Valley Water has provided funding for the SCW (Priority D4; see Section 1.4.1) to study and prioritize habitat for rearing and spawning enhancement in County steelhead streams. Similarly, Settlement Agreement § 6.2.4.3.2 called for a program to be implemented in Phase 1 to enhance rearing habitat by identifying locations for appropriate placement of large organic debris, channel modifications (including berms), and riparian canopy enhancement.

2.3.5 Geomorphic Functions

The geomorphic functions of a stream are dynamic and include inter-related physical, chemical, and biological processes that create and maintain the character of a stream and its associated riparian habitat. The geomorphology of high-functioning streams supports habitat diversity, maintains channel equilibrium, and provides a sediment source for riparian and aquatic habitat succession.

Pilot projects for restoration of geomorphic functions, as defined in Settlement Agreement § 6.2.4.4, would occur in Phase 1 and could include any of the following: channel enhancements; modifying channel dimensions for the purpose of carrying bankfull flow; varying the meander shape; planting riparian vegetation; removing culverts, riprap, and other structures; and stabilizing the area with the use of bioengineering techniques. The elements from the Settlement Agreement described below provide guidance.

2.3.5.1 Geomorphic Functions Study and Pilot Projects

Per Settlement Agreement §§ 6.2.4.4.1 and 6.2.4.4.2, a *Geomorphic Functions Study* should include:

- identification of stream reaches where geomorphic functions necessary for channel maintenance or formation are impaired;
- evaluation of the feasibility of restoring geomorphic functions in those stream reaches identified as impaired; and
- development and implementation of pilot projects based on the feasibility analysis listed above with the goal of a minimum of 2,000 linear feet of channel in each of the Three Creeks watersheds.

This measure would include review of existing available data related to geomorphic and habitat conditions in each creek, and collection of additional data and modeling to characterize the impairment of geomorphic functions in each creek. This assessment would focus on the stream reaches within the management zones. Feasibility criteria would be developed and applied to each reach identified as impaired to prioritize reaches and locations for conducting pilot restoration projects. Feasibility criteria would include factors

such as technical feasibility, project sustainability, cost effectiveness and economic feasibility, length of time to implement, extent of local support, potential for impacting private lands, potential for impacting flood control, monitoring feasibility, consistency with purpose of uses designated by the SWRCB, and potential for impacting special-status species. Pilot projects would be identified and evaluated based on the expected fisheries habitat benefits, fish population limiting factors, and the extent to which the feasibility criteria are met.

One pilot project has already been completed in the Stevens Creek watershed. The Blackberry Farm project, constructed in 2006 and 2009 (two phases), is discussed further in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)*. Studies and pilot projects in the other two watersheds have not yet been implemented.

2.3.5.2 Bank Stabilization Guidelines

Valley Water was also tasked with establishing general guidelines for bank stabilization projects undertaken by others. Per Settlement Agreement § 6.2.4.4.3, the guidelines would include techniques and strategies based on the ability of riparian vegetation to hold soil, protect banks, and otherwise stabilize the stream channel. The guidelines would also address use of structures to rebuild a streambank and offer stability until riparian vegetation is established.

As part of the SMP (2014–2023; Valley Water 2014), and in consultation with resource agencies, Valley Water developed bank stabilization guidelines documenting Valley Water's commitment to avoiding impervious hardscape materials where technically feasible. The SMP will be used as a resource for development of the bank stabilization guidelines called for by the Settlement Agreement. These guidelines specify that no more than half the number of bank repair activities will consist of impervious hardscape materials (in all watersheds combined) each year. In selecting a bank stabilization technique, Valley Water undertakes a multiple-step process to determine the least environmentally damaging practicable alternative, including assessments of fish, wildlife, and geomorphic conditions. The bank stabilization methods that would address the erosion/risk hazard and are technically feasible are ranked based on the combination of meeting the repair objective(s)—having the least environmental impact—and cost.

Bank stabilization activities that involve either the sole use of native vegetation (softscape) or other bioengineering design techniques are evaluated for their suitability at a repair site. Softscape or hybrid methods are utilized whenever they are determined to be practicable. In addition, the potential for natural re-establishment of riparian or other vegetation is incorporated into each bank design and method selection. Softscape approaches are typically used in lower velocity, grass-lined channels; in more natural creek settings where poor soil conditions exist; or where the creek conditions can tolerate higher hydraulic roughness conditions. The most common softscape approach at these sites is to reconstruct the slope with earthen materials and revegetate. Softscape approaches may use a variety of willow plantings, contour wattling, brush mattresses, root wads, log crib walls, and earthen soil banks to provide effective erosion control and resource enhancement. Where feasible, these softscape approaches are combined with additional plantings or other instream features to further enhance and restore riparian and channel habitat. Additional detail is provided in Valley Water (2014).

2.3.6 Advanced Recycled and Other Urban Water Plan

In cooperation with the City of San Jose, Settlement Agreement § 6.2.4.5 directs Valley Water to complete an *Advanced Recycled and other Urban Water Plan*. The plan would evaluate the feasibility and suitability of using the water, supplied by the City of San Jose after Advanced Recycled Water Treatment (ARWT), to enhance the continuity of instream flow suitable for achieving the overall management objectives in the Three Creeks (see Section 2.2 *FHRP Management Objectives*), from the highest point of fish passage downstream to the Bay. The direction goes on to provide further guidance by stating:

It will also evaluate the feasibility of using other urban water, such as discharges from storm sewers, sump pumps, and similar sources, for this same purpose. The evaluation of feasibility will include, for each watershed, a reasonable range of alternatives for: (i) direct use of ARWT water and other urban water for such instream flow; and (ii) conjunctive use of natural flow, imported water, groundwater, and ARWT or other urban water. The evaluation of suitability will include impacts on fish habitat (including water temperature, toxicity, and endocrine disruption) and other beneficial uses. If a feasible and suitable alternative exists, the plan will recommend action, including designs and schedules for construction of any necessary facilities.

This measure is limited to development of a plan for future water use options. This Plan would be developed during implementation of Phase 1, so details about the Plan are not currently available. Development of the *Advanced Recycled and other Urban Water Plan* would include the compilation of existing data and reports developed to address impacts and benefits of using recycled water on water quality, groundwater, and fisheries habitat conditions in the Three Creeks. Data gaps would be identified for the purpose of identifying additional studies, modeling, or data collection efforts needed to evaluate the feasibility and suitability of using recycled or urban water to help meet the overall management objectives.

2.4 Three Creeks Field Surveys

Field surveys have been conducted to determine existing conditions (baseline) and to use in models of future conditions for the Three Creeks FHRP area: Entrix completed a multi-season survey in 1999, and Valley Water biologists conducted a second series of surveys in summer 2016 (Figure 2-1). The study areas in the 1999 and 2016 field survey efforts that were used to both assess current and model future conditions for the watersheds varied only slightly. A brief overview of the field survey efforts used to characterize existing geomorphic conditions and fisheries habitat, as well as to determine the reaches and points used for the fish habitat modeling effort, is included in the following sections. Valley Water also conducted limiting factors analyses in Stevens Creek in 2004 and in Upper Penitencia Creek in 2006. In addition, studies in 2003 and 2011 to characterize existing conditions are also described.

2.4.1 1999 Entrix Field Surveys

Physical habitat conditions were surveyed in all of the primary creeks in the Three Creeks FHRP area, namely Stevens Creek, Guadalupe Creek, Alamitos Creek, Calero Creek, Los Gatos Creek, Guadalupe River, Coyote Creek, and Upper Penitencia Creek. Surveys were conducted during summer and fall 1999 using methods modified from Flosi et al. (1998; Entrix 2000). Downstream of Anderson Reservoir, Coyote Creek was delineated into eight channel reaches by Entrix for the 1999 surveys (Entrix 2000); delineated reaches for both the 1999 Entrix and 2016 Valley Water surveys (discussed below) are shown in figures in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, corresponding to each watershed discussion. North of Highway 237, the tidally-influenced, most-downstream reach was not surveyed.

The physical habitat assessment focused on identifying the unique aquatic habitat features that support salmonids in Santa Clara Valley streams. Salmon and steelhead rearing habitat in Santa Clara Valley streams can be found in low-gradient riffles and at the heads of pools with higher velocities and adequate depth (Moyle 2002). Key findings from the 1999 habitat surveys (Entrix 2000) are summarized below:

- Adequate potential spawning gravel appeared to be present in most of the streams.
- More suitable rearing habitat was found in the upper portions of the streams surveyed, compared to downstream portions.
- The middle and lower reaches of the mainstem of each of the three river systems surveyed were found to function primarily as migration corridors (rather than spawning and/or rearing habitat).

- The lower reaches of the three main stream systems passed through extremely confined and deeply entrenched channels in highly urbanized areas.
- There was an overall lack of woody debris in the surveyed streams.

More detailed creek-specific survey findings are presented in watershed-specific discussions provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*.

2.4.2 2003 EOA Assessment of Stream Ecosystem Functions for the Coyote Creek Watershed

In 2003, EOA, Inc. issued a report prepared for the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCURVPPP) that describes how stream ecosystem functions were assessed in the Coyote Creek watershed using available data, and the relationship to the assessment methodology implemented by the Santa Clara Basin Watershed Management Initiative (SCBWMI) and to the monitoring methodology recommended by the Bay Area RWQCB. The study area included portions of Upper Penitencia Creek below Cherry Flat Dam and Coyote Creek below Anderson Dam. The existing capacities of study area reaches to support the following four physical ecosystem functions were assessed using hydrogeomorphic models: hydrologic processes and channel dynamics, aquatic habitat, riparian habitat, and landscape-level connectivity.

2.4.3 2004 and 2006 Limiting Factors Analyses

In 2004, Valley Water finalized its limiting factor analysis for Stevens Creek (Stillwater Sciences 2004). A limiting factor analysis was also finalized for the Upper Penitencia Creek in 2006 (Stillwater Sciences 2006). The objectives of the limiting factors analyses were to identify and fill information gaps related to physical and biological factors controlling population dynamics of steelhead and to identify the impacts of sediment on steelhead relative to other potential limiting factors.

The analysis of Stevens Creeks found that:

1. barriers, both partial and complete, limit access to a substantial amount of stream habitat; effects of barriers on smolt production depend on the ability of fish to pass barriers (upstream and downstream);
2. seasonal low flows downstream of Fremont Avenue may severely limit steelhead outmigration success in some years, especially if channel drying occurs before the end of the outmigration period (typically February through May);
3. gravel permeability is low but not likely limiting smolt production;
4. pool filling is low, indicating high sediment transport capacity relative to sediment supply;
5. bed mobility (and therefore potential redd scour) is relatively low in upper reaches but increases downstream;
6. overwintering habitat is likely the key limiting factor for steelhead prior to smolt outmigration; and
7. water temperature is elevated but not likely to lethal levels and is not likely limiting fish growth, as evidenced by the size distributions of age 0+ and 1+ steelhead.

The analysis of Upper Penitencia Creek found that:

1. no barriers to upstream migration below natural waterfalls in Upper Penitencia Creek and Arroyo Aguague were identified, although a passage impediment in Alum Rock Park may limit passage opportunities at some flow levels;
2. seasonal low flows in the downstream reaches may limit steelhead outmigration success in some years, especially if channel drying occurs before the end of the outmigration period (typically March through May);

3. gravel permeability is low but not likely limiting smolt production due to habitat limitations at other life stages;
4. pool filling is low, indicating high transport capacity of fine sediment relative to supply;
5. preliminary analysis suggests that overwintering habitat is likely the key limiting factor for steelhead prior to smolt outmigration; and
6. potential limitations to steelhead density and fish growth may exist in Upper Penitencia Creek due to low stream flows and warm water temperatures during the summer period.

2.4.4 2011 EOA and SFEI Ecological Monitoring and Assessment Framework

In 2011, EOA and SFEI issued a second final technical report prepared for Valley Water that implemented the Ecological Monitoring and Assessment Program (EMAP) Framework in the Coyote Creek watershed. The EMAP Framework was to:

- integrate state-of-the-science methods and understanding of ecological conditions with Valley Water management actions;
- integrate ecological monitoring activities within Valley Water and with external efforts;
- identify and prioritize gaps in existing ecological monitoring data necessary to answer important Valley Water management questions;
- identify cost-effective approaches to address prioritized data gaps; and
- ensure ongoing integrative and interpretive assessments and reporting of ecological data.

The assessment implemented the California Rapid Assessment Method, a standard method used to rapidly assess the overall condition of wetlands and riparian sites using visual indicators.

2.4.5 2016 Valley Water Field Surveys

In 2016, approximately 10.5% of the stream habitat surveyed in the 1999 Entrix effort was revisited by Valley Water in an effort to test the current validity and applicability of using the 1999 data as existing (baseline) habitat conditions (Figure 2-1; Valley Water 2016). The amount of riffle, flatwater, and pool habitat data from the 1999 field effort by Entrix (see Section 2.4.1 *1999 Entrix Field Surveys*) was to be compared to the corresponding subset collected in 2016.

The fieldwork involved Valley Water-defined Points of Interest (POI) and POI Reaches. These reach designations overlapped with the Entrix Reaches used in 1999 (as noted above, maps showing both reach designations are provided in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, based on watershed). POI are discrete points where temperature and flow model results will be generated and evaluated during monitoring and adaptive management (further details in Chapter 6 *Adaptive Management Program*). The POI is numbered according to stream name (for example, COYO represents a POI on Coyote Creek; ALAM represents a POI on Alamitos Creek), followed by a number, beginning with "1" at the most downstream surveyed reach and increasing as moving upstream (Figure 2-2). The POI Reaches are discrete reaches of stream in the Three Creeks, corresponding in name to the POI identified at the downstream extent for that reach, that have been and will be assessed by Valley Water to determine whether they can support specific life stages of salmonids.

During the 2016 field effort, measurements were taken from 69 sampling sites, covering 24 separate reaches and 7.4 miles of stream habitat. Valley Water also recorded measurements of water quality, as requested by CDFW (Valley Water 2016). The habitat surveys included habitat typing according to Flosi et al. (1998) and collection of additional habitat data for the purpose of estimating indices of habitat suitability and availability by life stage. Habitat suitability parameters included water temperature, flow velocities, and depths; these were used to "grade" each of the eight 1999 Entrix Reaches.

As anticipated, due to geomorphic processes, habitat restoration efforts, and other channel or hydrologic alterations, habitat characteristics in 18 of the 24 sampled reaches showed statistically significant differences between the 1999 and 2016 datasets. Since it is more reflective of current conditions for the purposes of this FHRP, the 2016 habitat data was prioritized to represent existing habitat type proportions for most geomorphic reaches, and with a few exceptions was supplemented by the 1999 Entrix data. Three exceptions occurred in the Coyote Creek watershed, while two exceptions occurred in the Guadalupe River watershed; more detail is included in Chapter 4 *Guadalupe River Watershed (Phase 1 Measures)* and Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)*, corresponding to watershed. A technical memorandum drafted by Valley Water (see Appendix O *Use of Habitat Data in Support of CEQA Analysis for FAHCE Fish Habitat Restoration Plan* located in the EIR) provides the statistical rationale used by Valley Water in selecting from the 1999 Entrix data and the 2016 Valley Water data. The selected data was used to represent current conditions for habitat reaches in the Habitat Availability Estimation Model used in the EIR prepared for this FHRP to evaluate the effects of the proposed Reservoir Reoperation Rule Curves on fish habitat.

Figure 2-1. 1999 Entrix and 2016 Valley Water Field Survey Study Areas

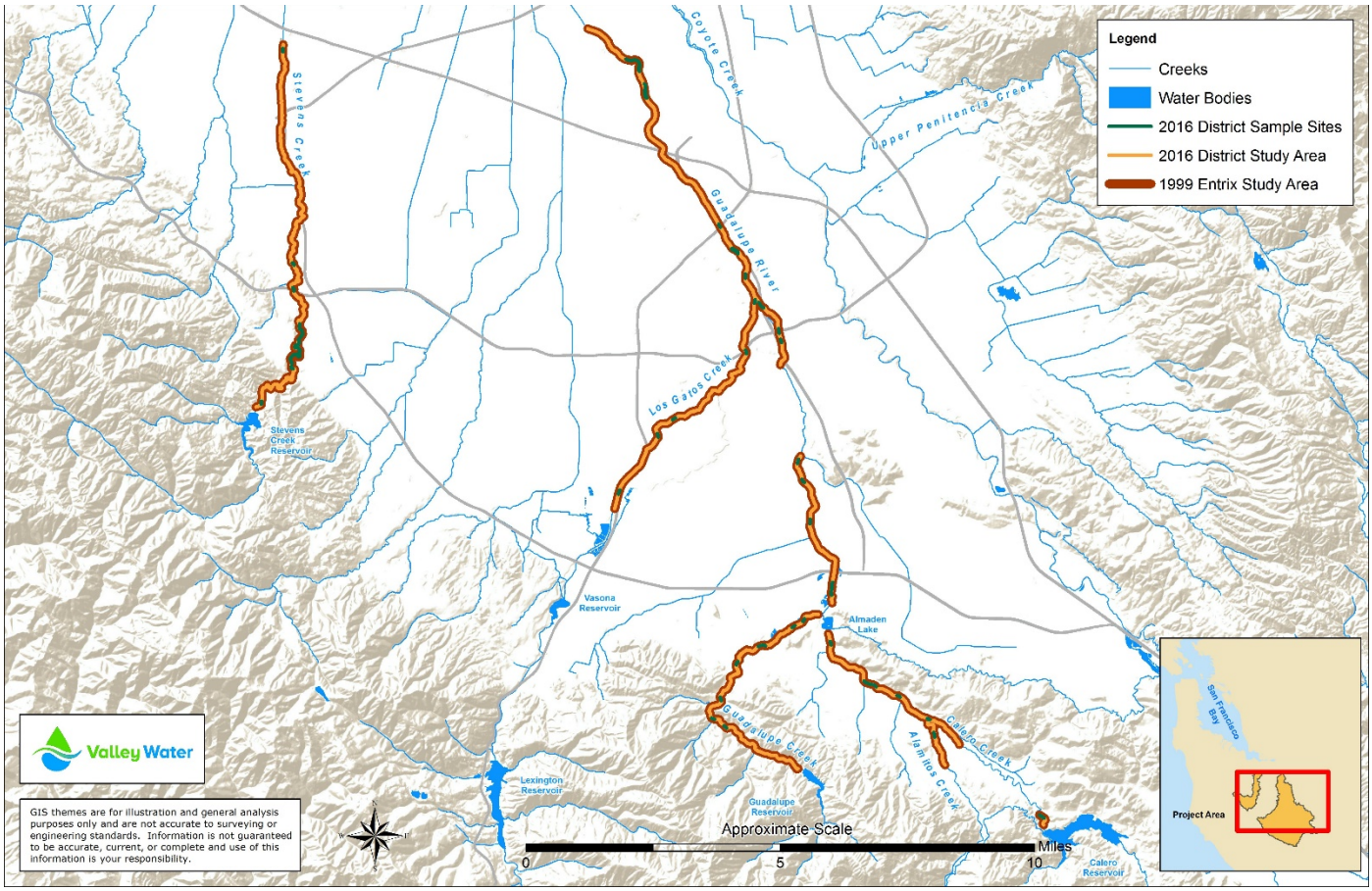
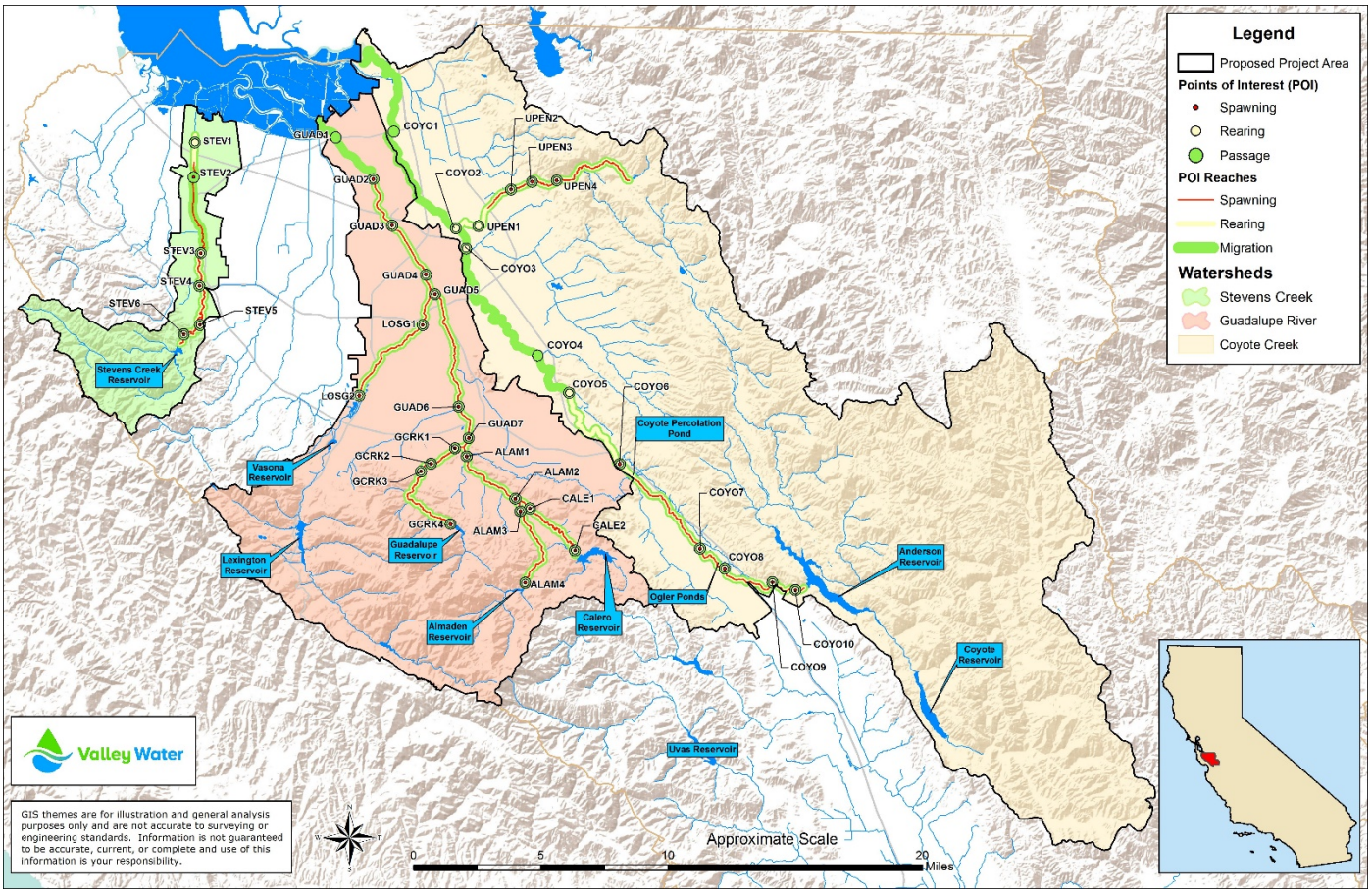


Figure 2-2. Three Creek Reaches and Points of Interest



Chapter 3 – Stevens Creek Watershed (Phase 1 Measures)

This chapter provides management objectives for the Stevens Creek watershed as well as a discussion of watershed-specific Phase 1 measures designed to achieve the management objectives. Implementation status is included for each measure, as well as a brief overview of future Valley Water responsibilities.

3.1 Watershed-specific Objectives

Section 2.2 *FHRP Management Objectives* describes the primary objectives of the FAHCE program for the Three Creeks. Specific to Stevens Creek, the management objective of this FHRP is to restore and maintain a healthy steelhead population in the Stevens Creek watershed by providing:

- suitable spawning and rearing habitat below Stevens Creek Dam within a CWMZ (Figure 3-1) as determined on an annual basis through the development of an operations plan;
- adequate passage for adult steelhead to reach suitable spawning and rearing habitat, and for outmigration of juveniles; and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP.

Under Settlement Agreement § 7.3, measurable performance objectives consistent with the FAHCE program management objectives will be defined through the AMP process (see Chapter 6, *Adaptive Management Program*). As described in Settlement Agreement § 7.3, these performance objectives for the Stevens Creek watershed would correspond to those habitat qualities that will be affected by Valley Water facilities and operations, and that are within Valley Water's control. Many in-basin and out-of-basin variables affect steelhead population abundance that are outside of Valley Water's control, such as simplified habitat conditions, stream crossings, urban runoff, harvest, hatchery practices, predation, climatic conditions, and ocean conditions. In particular, ocean productivity can have a substantial influence on year-to-year fluctuations in salmonid population abundance, irrespective of freshwater conditions (Lindley et al. 2009). Therefore, performance objectives would not include habitat qualities outside the control of Valley Water operations, nor would they include objectives that would be measured with broad population recovery thresholds. Measurable performance objectives would be set by the AMT to meet both the overall and the stream-specific management objectives described in the Settlement Agreement (§ 6.2.2 for overall management objectives and § 6.5 for Stevens Creek-specific objectives) and discussed earlier in this FHRP.

As mentioned in Chapter 2 *Three Creeks Objectives and Common Elements*, this chapter is focused on Phase 1 measures; Phases 2 through 4 are discussed in Chapter 6 *Adaptive Management Program.*

3.2 Stevens Creek Watershed Characteristics and Fisheries Habitat Conditions

This section describes the characteristics of the Stevens Creek watershed and provides a brief overview of the watershed's historical and current conditions as they relate to fish habitat.

3.2.1 Watershed Characteristics

The Stevens Creek watershed covers 29 square miles in western Santa Clara County. Stevens Creek originates in the Santa Cruz Mountains and flows north along the San Andreas Fault for approximately 5 miles. The creek then flows northeast for approximately 3 miles, enters Stevens Creek Reservoir, and continues north for approximately 13 miles before discharging into the Bay (Figure 3-1). In addition to reservoir releases, inflows to Stevens Creek include the Permanente Diversion, Heney Creek, and imported flow from the Stevens Creek Pipeline. Flow losses along Stevens Creek include groundwater

recharge losses. Some flow in Stevens Creek is transmitted to the Santa Clara groundwater subbasin via a recharge zone between I-280 and Fremont Avenue. Although Figure 3-1 shows Hetch-Hetchy Pipeline and West Pipeline crossing Stevens Creek, they all run under or over the stream and none are hydrologically connected to Stevens Creek. Historical stream gage information along Stevens Creek is available at two locations: Stevens Creek Reservoir Outlet (5044) and just north of Evelyn Road (5035). POI that were established by Valley Water to assess habitat conditions in 2016 (see Section 2.4 *Three Creeks Field Surveys*) and that will be used for data collection during monitoring (see Chapter 6 *Adaptive Management Program*) are shown in Figure 3-2. POI Reaches are identified by type(s) of fish habitat with potential to occur (that is, spawning, rearing, and/or migration corridor) and correspond to nearest upstream POI (for example, POI Reach STEV2 is the reach that occurs between POI STEV1 and POI STEV2 on Stevens Creek).

Figure 3-1. Stevens Creek Watershed Regional Map

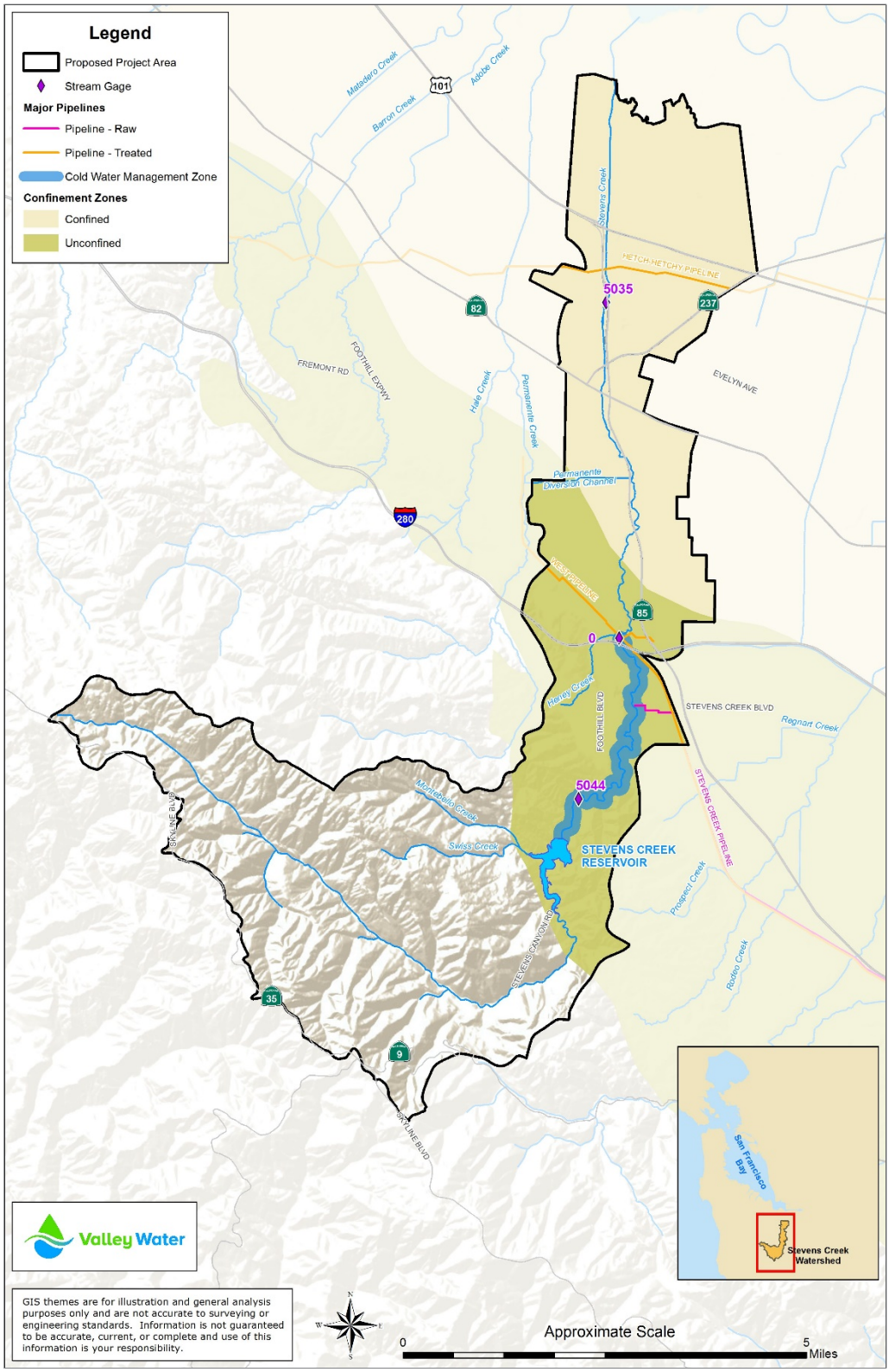
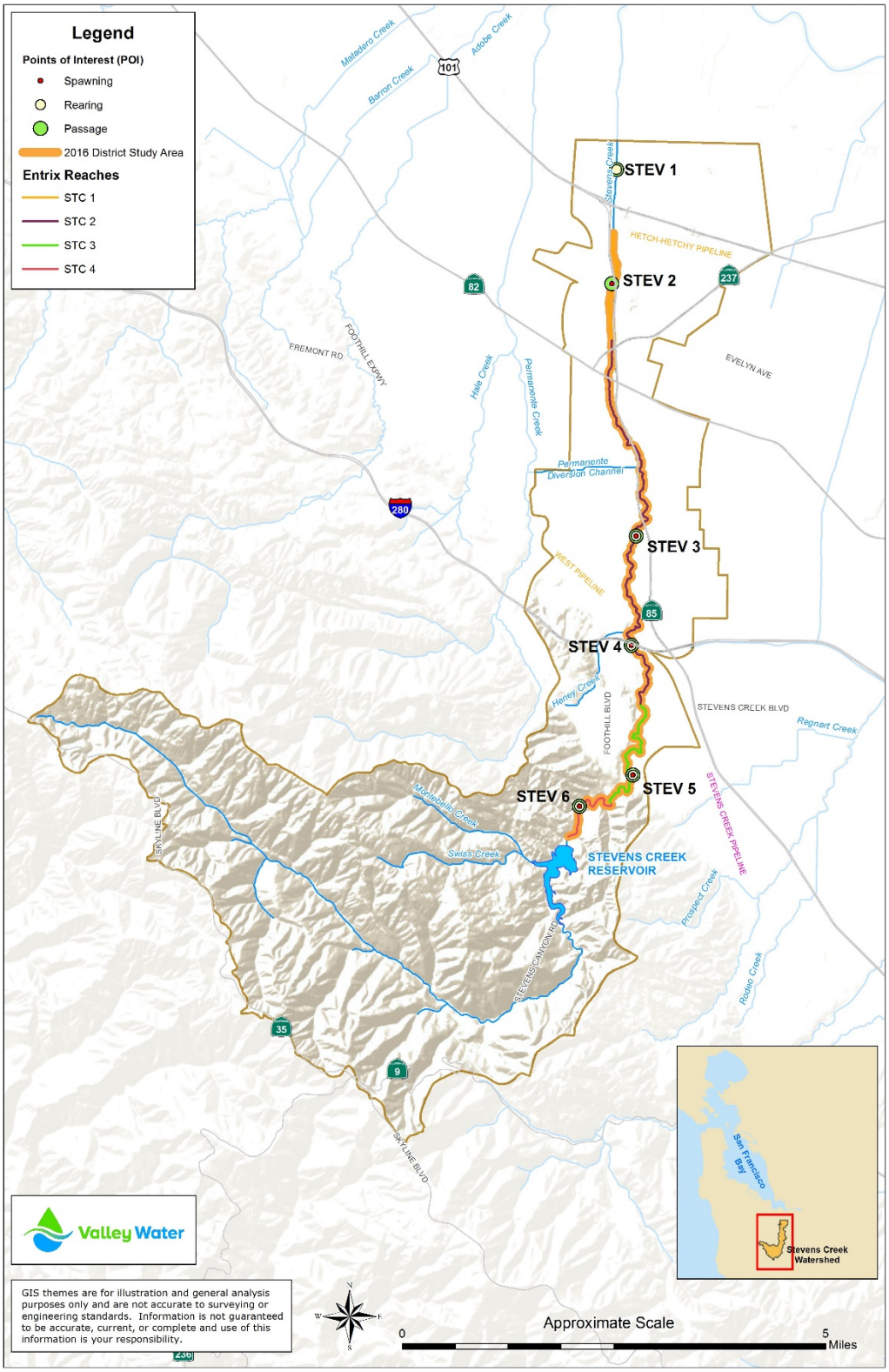


Figure 3-2. Stevens Creek Channel Reaches (Entrix 2000 and Valley Water 2016)



3.2.2 Fisheries Habitat Conditions

Based on historical aerial images and survey maps, Beller et al. (2010) documented historical characteristics of western Santa Clara Valley watersheds, including the Stevens Creek watershed. In contrast to current conditions, in which each major creek is connected to the Bay via engineered channels, the historical western Santa Clara Valley drainage network was characterized almost entirely by discontinuous stream channels. The *Lower Peninsula Watershed Stewardship Plan* confirms that Stevens Creek historically terminated before reaching the Bay, sinking into the coarse sediments of alluvial fans or spreading into wet meadows, marshes, and willow groves.

Lowe et al. (2017) summarized current ecological conditions in the Stevens Creek watershed, primarily using the California Rapid Assessment Method (CRAM). The CRAM provides numerical scores used to estimate the overall potential of a wetland to provide high levels of ecological services given the wetland type, condition, and environmental setting (Lowe et al. 2017). Specifically, CRAM scores are calculated based on visible indicators of physical and biological form and structure relative to statewide reference conditions (Lowe et al. 2017). Using a scale of poor, fair, or good condition, CRAM results indicated that the ecological condition of Stevens Creek downstream of Stevens Creek Reservoir was fair. The most important stressors (anthropogenic perturbations within the environmental setting) to ecological functions in Stevens Creek included transportation corridor, urban residential, engineered channel, non-point source discharges, grading/compaction, excessive human visitation, and lack of treatment of invasive plants (Lowe et al. 2017). Lowe et al. (2017) suggest that the ecological condition of Stevens Creek will decrease in the future due to the continued invasion of non-native vegetation, impacts associated with roads and development, and further incision of the channel and loss of riparian vegetation resulting in reduced biological and physical complexity of the channel and its riparian area. Lowe et al. (2017) also note that potential future changes in precipitation and air temperature associated with climate change, such as increases in peak winter flows and increased evaporative losses, may exacerbate channel incision, increase the risk of flooding, and reduce the overall amount of water in the watershed.

It could be speculated that Stevens Creek historically supported some of the same resident riverine fish species that were present in the Coyote Creek watershed, including rainbow trout, thicktail chub, hitch, California roach, Sacramento blackfish, Sacramento pikeminnow, speckled dace, Sacramento sucker, and Sacramento perch (Grossinger et al. 2006). For historically discontinuous streams, such as Stevens Creek (Beller et al. 2010), anthropogenic modifications to create a continuous channel connection to the Bay have improved access for steelhead. However, the construction of Stevens Creek Dam in 1935 created a barrier to anadromous fish passage upstream; this feature has been identified by NMFS as having the single greatest impact on the steelhead population of the Stevens Creek watershed, causing the loss of approximately 54% of the watershed's historical intrinsic potential steelhead habitat (NMFS 2016).

Fish species documented under recent conditions in Stevens Creek include hitch, California roach (*Hesperoleucus symmetricus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker, rainbow trout, threespine stickleback (*Gasterosteus aculeatus*), and centrarchids (Leidy 2007). In fall 2020, Valley Water conducted juvenile steelhead rearing and species assemblage monitoring at six stations in Stevens Creek between Homestead Road and the base of Stevens Creek Dam. All species collected were native to the system and included the following: three-spined stickleback, California roach, Sacramento sucker, and steelhead. Valley Water also conducted reservoir fish sampling in 2018 and 2019 in Stevens Creek Reservoir. Species captured included non-native black crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), and largemouth bass, as well as native Sacramento sucker and rainbow trout.

During 1999 and 2016, Entrix and Valley Water conducted habitat typing surveys in the Three Creeks for the FAHCE program (Section 2.4 *Three Creeks Field Surveys*). Figure 3-2 shows the 1999 Entrix Reaches in relation to Valley Water's POI Reaches that were used in the 2016 field surveys and will be used for future monitoring for the FHRP (Chapter 6 *Adaptive Management Program*).

Downstream of Stevens Creek Reservoir, Stevens Creek was delineated by Entrix (2000) into four channel reaches for the 1999 surveys (Figure 3-2). Entrix Reach STC1 is the most downstream reach, beginning south of Highway 101 and extending to Landels Park; Entrix Reach STC2 extends from Landels Park to Stevens Creek Boulevard and is the longest reach. It is slightly more than half the length of the full channel that was habitat-typed during the 1999 surveys. Entrix Reach STC3 extends from Stevens Creek Boulevard to Linda Vista Park; Entrix Reach STC4 is the most upstream reach, extending from Linda Vista Park to Stevens Creek Reservoir.

The proportion of riffle habitat units identified by Entrix (2000) was relatively low in all four reaches, ranging from approximately 10% to 18%. Flat-water (including runs and glides) units represented more than 50% of the habitat units in Entrix Reach STC1 and represented progressively lower proportions of the habitat units moving upstream (approximately 25% in Entrix Reach STC4; Entrix 2000). By contrast, pool units represented approximately 60% of the habitat units in Entrix Reach STC4 and represented progressively lower proportions of the habitat units moving downstream (approximately 35% in Entrix Reach STC1; Entrix 2000).

Insufficient food transport and shallow water depth were identified as constraining factors for juvenile steelhead in some habitats in some reaches. The area of each habitat type by reach estimated to be suitable for juvenile steelhead ranged from approximately 3% to 10%. In general, Stevens Creek noticeably lacked woody debris, although spawning gravels were found in all reaches. However, potential spawning substrate was compacted in approximately 50% of Entrix Reaches STC2 and STC3, which account for the majority of the length of Stevens Creek (Entrix 2000). Spawning substrate was generally not compacted in the uppermost reach (Entrix Reach STC4; Entrix 2000).

During September and October 2010, Abel (2011) conducted habitat surveys in 12 200- to 650-foot-long reaches in Stevens Creek, which included habitat typing according to Flosi et al. (1998) and collecting a modified subset of the habitat data collected by Entrix (2000). Pool habitats represented approximately 80% to 90% of the habitat units at the two most downstream sites and more than 50% of the habitat units at the two most upstream sites. Flat-water units represented at least 50% of the habitat units at five of the sites. A qualitative classification of juvenile (age 1+/2+) steelhead habitat quality indicated generally fair or good conditions at the upstream sites, and fair to poor conditions at the downstream sites. Habitat constraints for juvenile rearing were identified as turbidity and, to a lesser extent, substrate and cover at the upstream sites; substrate, flow, and cover at the downstream sites; and substrate and depth at the sites in the middle region of the creek (Abel 2011).

In 2004, Stillwater Sciences (2004) conducted a limiting-factors analysis on Stevens Creek. The assessment suggested that insufficient fish passage and lack of juvenile steelhead overwintering habitat were likely the greatest influences on steelhead in the creek. In 2000, the TAC indicated that water temperature, particularly during late summer and early fall, was a critical limiting factor affecting habitat quality and availability for juvenile steelhead rearing in Stevens Creek.

During September and October 2016, Valley Water conducted habitat surveys in Stevens Creek, including habitat typing according to Flosi et al. (1998) and collection of additional habitat data for the purpose of estimating indices of habitat suitability and availability by lifestage. These surveys were delineated using Valley Water's POI Reaches (Figure 3-1 and Figure 3-2; Section 2.4.5 *2016 Valley Water Field Surveys*). Valley Water surveyed approximately 10.5% of the length of Stevens Creek that had been surveyed during 1999, including the entirety of the approximately 1-mile Blackberry Farms restoration reach from Stevens Creek Boulevard upstream to McClellan Road (Figure 3-2; Valley Water 2016).

The proportion of riffle habitat units reported by Valley Water (Valley Water 2016) in Stevens Creek was higher than the proportions reported by Entrix (2000) in all four reaches, ranging from approximately 25% to 50%. Flat-water units were more common than reported by Entrix (2000) in most reaches, but generally

maintained a similar pattern of a decreasing proportion of flat-water units moving upstream (ranging from 64% in Entrix Reach STC1 to 29% in Entrix Reach STC4). Pool units represented notably lower proportions of the habitat units in all reaches relative to the proportions reported by Entrix (2000), but maintained the same pattern of an increasing proportion by reach moving upstream (ranging from approximately 9% in Entrix Reach STC1 to 47% in Entrix Reach STC4). The difference in distribution of habitat type proportions reported by Valley Water (2016) and Entrix (2000) in Stevens Creek were statistically significant in all reaches (Appendix O *Use of Habitat Data in Support of CEQA Analysis for FAHCE Fish Habitat Restoration Plan* located in the EIR). Therefore, for all reaches, the 2016 field results were used to characterize existing habitat conditions for the Habitat Availability Estimation Model, which was used to evaluate the effects of the proposed Reservoir Reoperation Rule Curves on fish habitat, and will be used to compare against future monitoring results to assess effects of FHRP measure implementation and identify adaptive management opportunities.

3.3 Proposed Changes to Water Rights

One water rights change petition is proposed for the Stevens Creek watershed (Table 3-1).

Table 3-1. Proposed Water Right Change Petition for Stevens Creek Watershed

Permit Number	Facility/Water Source	Priority Date	Current Appropriation (AFY)	Diversion Period	Existing Purpose of Use	Change Proposed in Petition
4918	Stevens Creek Reservoir/ Stevens Creek	12/09/1931	4,000	12/01 to 04/30	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement

AFY = acre-feet per year; Domestic = Domestic Water Supply

3.4 Flow Measures and Reservoir Reoperation Rule Curves

Section 2.3 *Three Creeks Common Elements* provides a general description of each type of flow curve as well as the goals and process used to develop reservoir-specific rule curves to govern operations at each of Valley Water's Three Creeks reservoirs. These rule curves provide operational criteria for winter base flows to promote steelhead spawning and egg incubation; pulse flows to promote upmigration and outmigration; summer flows to promote temperature management for steelhead rearing; and flow ramping to minimize impacts to aquatic species that could occur with rapid changes in conditions.

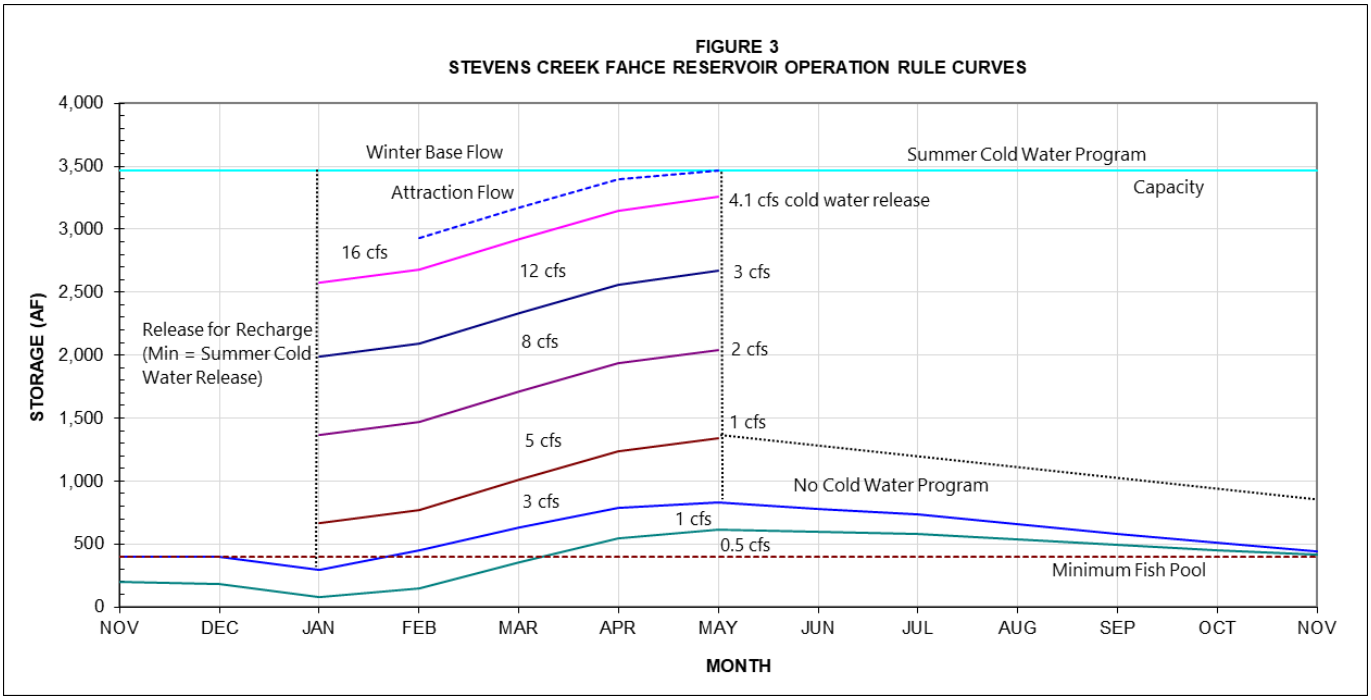
The Reservoir Reoperation Rule Curves for Stevens Creek are illustrated in Figure 3-3. The figure shows different Reservoir Reoperation Rule Curves based on different storage flows and pulse flows at certain times of the year. The curves address reservoir storage and releases under annual conditions that vary with precipitation, water releases, inflow to the reservoir, and evaporation. In all cases, flows would be ramped to prevent the flow releases below the reservoir from stranding steelhead.

Actual operational releases on any given date would depend on where the reservoir storage volume falls on the graduated rule curves. For example, if the storage volume is above the highest winter reoperation rule curve (shown in pink in Figure 3-3), 16 cfs would be released. As storage volume decreases, or if storage never reaches the 16 cfs winter reoperation rule curve, winter releases would be lower, in accordance with the appropriate rule curve.

Operational performance objectives relating to flow rates would be evaluated based on a 3-day rolling average of flow measurements taken at the most upstream-located stream gage (5044; Figure 3-1). Biological performance objectives for seasonal flows are expected to vary depending on the storage conditions and associated Reservoir Reoperation Rule Curve being operated during a given season

(Figure 3-3). Chapter 6 *Adaptive Management Program* provides proposed monitoring tools and objectives for winter base flows, pulse flows, and summer rearing flows.

Figure 3-3. Stevens Creek Reservoir Reoperation Rule Curves



3.4.1 Present Reservoir Operations

Stevens Creek Reservoir has a capacity of 3,138 AF, and the minimum fish pool is 400 AF (the minimum fish pool is the minimum amount of water in storage). This minimum fish pool was established by a 1962 Valley Water resolution. Releases from Stevens Creek Reservoir can be made through two outlets: a valve at the base of the dam with a maximum capacity of 410 cfs when the reservoir is at maximum capacity; or over a spillway, with a maximum release rate of 15,715 cfs. No seismic restrictions that would limit water storage to below construction capacity have been designated by DSOD for the Stevens Creek Reservoir.

Prior to the 1996 water rights complaint, water releases were focused primarily on groundwater recharge. Historically, Valley Water has operated Stevens Creek Reservoir to maximize instream recharge in the reach that extends from the reservoir outlet to 1 mile downstream of I-280. Connection to the Bay was typically limited to periods of very high flow, usually during winter storms.

General operational rules post-complaint have included a more balanced effort, taking into consideration both groundwater recharge and fisheries, in addition to Valley Water's primary obligation of meeting water supply needs of Valley Water's water users. Valley Water priorities now include improving benefits to fisheries, which is accomplished by providing year-round sustained flow in a portion of the stream, maintaining a minimum reservoir fish pool, and increasing annual flow reliability.

3.4.2 Winter Base Flow

Winter base flows are intended to support steelhead spawning and egg incubation in Stevens Creek. Therefore, Valley Water would release winter base flows from Stevens Creek Reservoir from January 1 through April 30, in accordance with Reservoir Reoperation Rule Curves (Figure 3-3). The baseflow would be evaluated through the AMP (see Chapter 6, *Adaptive Management Program)* to determine if objectives

are being met and to validate prescribed flows. Prior to winter base flows, between November 1 and December 31, flows will be equal to or greater than the previous year's summer cold water release.

3.4.3 Pulse Flow

Prior to construction of Stevens Creek Reservoir, upstream and downstream steelhead migration is believed to have occurred coincidently with storm flows during late winter and early spring associated with precipitation and stormwater runoff within the watershed (FAHCE 2000). Although the natural hydrology in a wet water year may provide adequate passage opportunities for steelhead in Stevens Creek, analyses conducted by the TAC found that Valley Water operations reduced the frequency of potential passage opportunities. Therefore, during development of the Settlement Agreement the Initialing Parties and Valley Water identified the need to implement up to two pulse flow events during years in which natural pulse flow events do not occur. As stated in Appendix E of the Settlement Agreement (included in Appendix A *Settlement Agreement, Appendix E Reservoir Reoperation Rule Curves*), these two sets of pulse flows would be released over 5 consecutive days each between February 1 and April 30 to facilitate adult steelhead immigration and steelhead smolt outmigration. Opportunities for both adult and smolt migration would not be limited to these two prescribed pulse flow events, and it is assumed that natural passage events would also occur. Criteria that could provide for additional pulse flows would be determined by the AMT and included in the AMP (see Chapter 6 *Adaptive Management Program*).

Again, as detailed in Appendix E of the Settlement Agreement (included in Appendix A *Settlement Agreement, Appendix E Reservoir Reoperation Rule Curves*), Valley Water would release pulse flows of 50 cfs from Stevens Creek Reservoir in the specified period when the following two criteria are met:

- reservoir storage is at least 250 AF higher than the 16 cfs winter reoperation rule curve for the date; and
- stream and weather conditions are such that it is safe to release 50 cfs for a 5-day period.

Per the Settlement Agreement, pulse flow releases are based on reservoir storage so as to conserve water in winter to support a reliable summer base flow. The reservoir would be operated in this manner until there have been two periods of 5 consecutive days of flows greater than 50 cfs (measured at stream gage 5044) during the migration period. Any spill event in excess of 50 cfs for 5 consecutive days between February 1 and April 30 would also be considered a pulse flow event.

3.4.4 Summer Rearing Flows and Temperature Management

Flow releases would be made from Stevens Creek Reservoir from May 1 to October 31 to maintain water temperatures in areas identified for juvenile rearing in the CWMZ (that is, for this watershed, Stevens Creek Dam to POI STEV4 at I-280; Figure 3-1) as available cold-water storage will allow (Figure 3-3).

Based on modeling conducted by the TAC to estimate the linear extent of the CWMZ at different water temperatures (that is, 17°C, 18°C, 19°C, and 20°C) through summer, as well as in consideration of the estimated linear extent of the "dryback" downstream of the CWMZ, the TAC set a mean daily water temperature target of 19°C through summer as cold water pool allows. This objective was developed in consideration of juvenile steelhead water temperature thresholds and the respective estimated linear extents of the CWMZ (see Appendix A, *Settlement Agreement*, § 6.5.2.1 (C)).

For the purpose of summer releases, the cold-water reservoir storage (15°C or less) would be determined each year by temperature surveys of the reservoir performed between April 15 and 30. The cold-water volume would be released at a constant rate so water temperatures do not exceed a daily maximum of 22°C, or a daily average of 19°C, throughout the CWMZ. Releases would be made to maintain the CWMZ for as long as cold-water storage is available. The graduated winter base rule curves are designed to achieve cold-water storage to support summer releases.

Additional reservoir temperature profiles would be established on a monthly basis from June through October, and releases would be adjusted to correspond to changes in the measured hypolimnetic volume. If the available cold-water volume would produce a cold-water flow release of less than 1 cfs throughout summer, releases would not be limited to the CWMZ, and releases for the purpose of recharging the capacity of the system would be allowed. Adaptive management triggers would be established by the AMT and included in the AMP to allow for such changes to proposed summer rearing flows rule curve (see Chapter 6 *Adaptive Management Program*).

3.5 Fish Passage Barriers

This section describes measures to address priority barriers to fish passage in Stevens Creek. Each discussion also provides the status of each measure's implementation. Figure 3-4 provides a map of barriers discussed in the following sections and designates the current implementation status for each facility.

Assessing the performance of fish passage facilities post-remediation will vary depending on the facility. However, measurable objectives to assess performance would relate to the flow conditions required to provide passage of adult and juvenile steelhead, and the frequency with which those flow conditions are met. Methods to monitor flow conditions in each of the Three Creeks and measurable objectives to assess success are discussed in Chapter 6 *Adaptive Management Program*.

3.5.1 Phase 1 Priority Barriers Owned by Valley Water

3.5.1.1 Evelyn Fish Ladder and Stream Gauge 35 – Early Implementation Project

The Settlement Agreement § 6.5.2.2 (A) identified four Valley Water-owned priority barriers for removal. The first two barrier remediation projects, identified as Evelyn Fish Ladder and Stream Gauge 35, have been completed (see Appendix B *Documentation of Completed Settlement Agreement Obligations*). Although these actions are complete, ongoing maintenance of these locations to as-built conditions remains a Valley Water responsibility. Finally, any further actions that are required at these locations to improve impaired fish passage conditions from previous or ongoing Valley Water activities would be included in future AMP measures (see Chapter 6 *Adaptive Management Program*).

3.5.1.2 Fremont Fish Ladder and Moffett Fish Ladder –FHRP Measure

The other two Valley Water-owned priority barriers identified for remediation in Stevens Creek are the Fremont Fish Ladder and Moffett Fish Ladder. Both of these projects, along with the Evelyn Fish Ladder project, were included in Valley Water's *Project 00294001 Final Planning Study Report* dated January 2010. The report recommended different alternative actions for the Fremont Fish Ladder, including the staff-preferred replacement of the existing ladder with a vertical slot fishway structure.

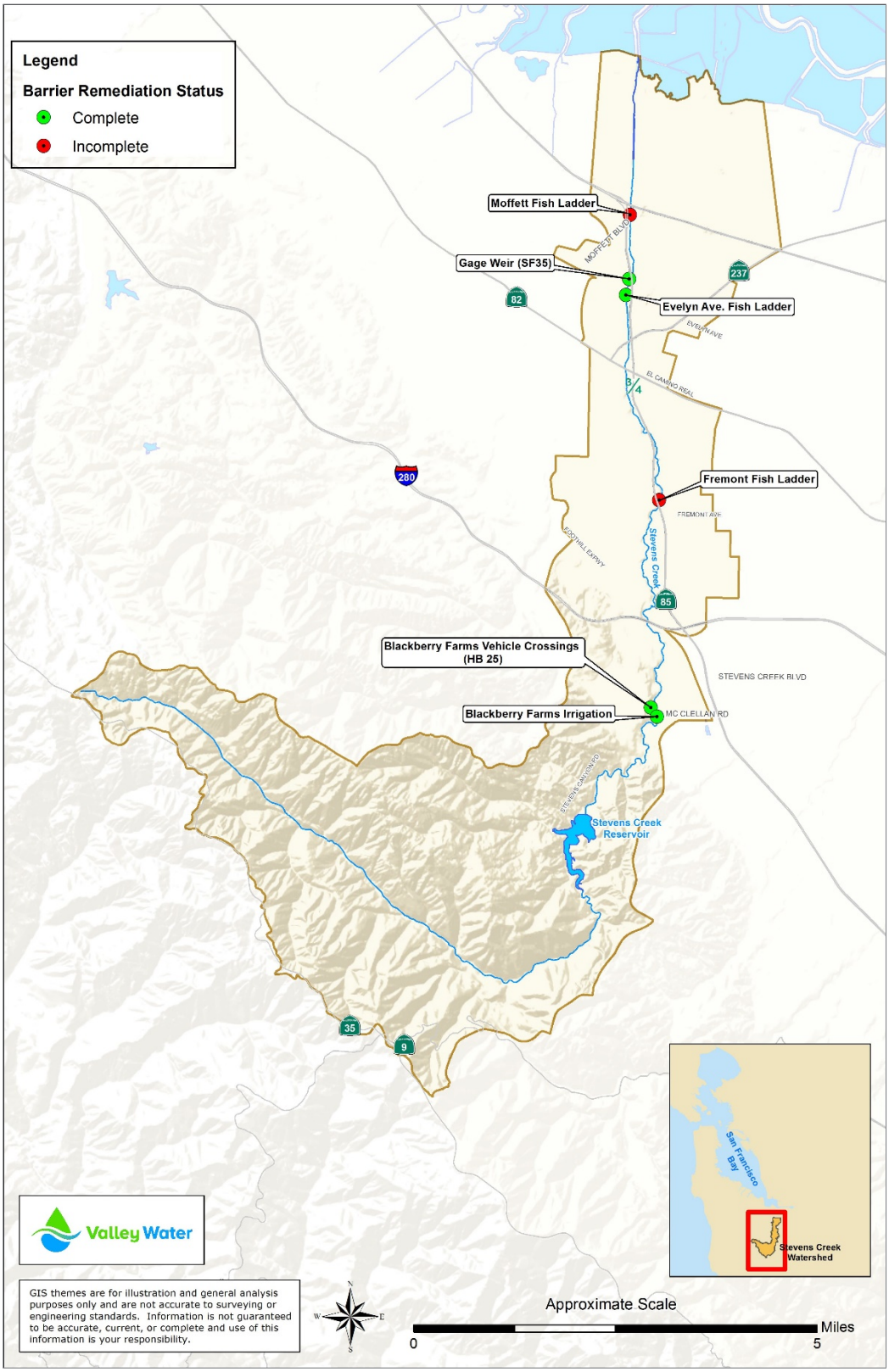
The 2010 Engineer's Report identified the Moffett Fish Ladder location as a low-flow channel option, which included retaining the existing fish ladder structure, constructing a natural ramp for other wildlife species, and constructing a low-flow channel downstream of the existing Denil Fish Ladder to extend to U.S. Highway 101. In 2016, Valley Water funded Measure B, or the SCW, which provided a grant for Michael Love & Associates to quantitatively assess the current conditions above and at the Moffett Drop Structure (Love & Associates 2016). The results of the existing conditions study will be considered in the planning phase to better define where the fish passage impediments occur at this facility (Love & Associates 2016).

Remediation activities at these two sites have not progressed beyond the planning stage; therefore, proposed project activities for both the Fremont and Moffett Fish Ladders are included in the actions of this FHRP.

3.5.2 Phase 1 Priority Barriers Owned by Others – Early Implementation Projects

Two priority non-Valley Water-owned barriers were identified for remediation: Blackberry Farms Road Crossings (HB25) and Blackberry Farms Irrigation Diversion (HB27). Both facilities are owned by the City of Cupertino, and remediation for both was completed in 2009. At these locations, three road crossings and a low-head diversion for hazard ponds were removed. Remediation consisted of removing the barriers and restoring the channel to a stable pool-riffle morphology consistent with conditions found upstream of the reach. Similar to the Evelyn Fish Ladder and Stream Gauge 35 locations discussed in Section 3.5.1 *Phase 1 Priority Barriers Owned by Valley Water*, monitoring and adaptive management for these locations are included within the scope of this FHRP (see Chapter 6 *Adaptive Management Program*). Monitoring at these locations would be to ensure that no critical riffle or other barriers form, with remediation and/or maintenance to follow; however, there is no remaining structure to maintain. A list of the actions taken at these two locations are included in Appendix B *Documentation of Completed Settlement Agreement Obligations*.

Figure 3-4. Priority Barriers Identified in Stevens Creek Watershed



3.6 Spawning and Rearing Habitat Improvements

This section describes measures that the TAC and Valley Water have identified to improve steelhead spawning and rearing habitat in Stevens Creek.

3.6.1 Spawning Gravel Augmentation

Near-census habitat typing surveys conducted in Stevens Creek in 1999 (Entrix 2000; Figure 2-1 *1999 Entrix and 2016 Valley Water Field Survey Study Areas*) found that the most upstream reaches in the CWMZ were dominated by pool and run habitats; suitable spawning substrate was not compacted; and embeddedness was generally limited to small, isolated areas. Subsampling habitat surveys conducted by Valley Water in 2010 and 2016 (Abel 2011; Valley Water 2016) found that spawning gravels within the CWMZ were often embedded to some extent, although the proportion of riffle units was higher than reported by Entrix (2000). Therefore, the FAHCE hypothesized that poor-quality spawning habitat due to high (that is, more than 25%) embeddedness by fine silt and sand could be a limiting factor for steelhead in Stevens Creek. Thus, a gravel placement program will be implemented to enhance existing spawning habitat, such as in existing areas that have the potential to be suitable for spawning, but where gravel conditions are inadequate for successful spawning and incubation.

Valley Water will develop annual work plans for spawning gravel augmentation for AMT review, the first of which will be prepared following approval of this FHRP. The process and schedule for spawning gravel augmentation are included in Chapter 6 *Adaptive Management Program.* Areas that are expected to be investigated for augmenting spawning substrate in Stevens Creek fall within the CWMZ (Figure 3-1). Extensive channel restoration was recently conducted by Valley Water and the City of Cupertino in an approximately 1-mile-long reach of the CWMZ. Further, given typical hydrologic conditions and the frequency of dry hydrologic years in the watershed, it would be most appropriate for direct gravel placement and gravel injection piles in spawning habitat adjacent and complementary to the recent restoration work. Monitoring information could result in additional gravel augmentation as discussed in Chapter 6 *Adaptive Management Program.*

Preliminary habitat suitability modeling indicates the presence of generally suitable spawning depths and velocities during portions of the steelhead spawning and incubation period within the CWMZ of Stevens Creek.[1] Therefore, it is expected that augmenting suitably-sized clean spawning gravels in the CWMZ could provide an immediate increase in suitable spawning habitat and could allow the natural formation of suitable spawning habitat landforms downstream.

Valley Water produced a study identifying specific restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. Site selection and project design would follow the methodologies and techniques of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010). One potential site identified during the study in Stevens Creek is in Stevens Creek County Park, just upstream and adjacent to Bay Tree Picnic Area.

Chapter 6 *Adaptive Management Program* proposes studies that will be implemented to identify the location(s) for augmenting gravel, as well as the substrate size composition and quantity of augmented gravel, before any gravel-augmentation activities are implemented. During Phase 1, the AMT will identify the specific locations and set the performance standard(s) to which the site(s) will be held following implementation of gravel augmentation measure(s). Any changes to the initial plan will be implemented through the AMP (see Chapter 6 *Adaptive Management Program*).

[1] Habitat suitability criteria (HSC) for steelhead spawning were developed by the FAHCE TWG for the Three Creeks watersheds based on HSC developed in similar-sized watersheds.

3.6.2 Juvenile Rearing Habitat Enhancements

Preliminary habitat suitability modeling indicates that water depths, velocities, and water temperatures are often generally suitable during the fry and juvenile rearing periods in the CWMZ. However, habitat data collected in 2016 (Valley Water 2016) indicate the amount of instream cover in most habitat units sampled was relatively low, and the complexity of the cover observed was generally moderate according to the criteria of Flosi et al. (2010). Improving the structural habitat conditions in these reaches would improve overall habitat suitability for juvenile rearing in Stevens Creek. Valley Water will use the study identifying specific restoration sites for rearing habitat enhancements (Valley Water 2018). As stated by the FAHCE, structural habitat for juvenile rearing could be limiting the steelhead abundance in Stevens Creek; thus, a program will be implemented to enhance juvenile rearing habitat. The program will include placement of large organic debris, channel modifications (including berms), and riparian canopy enhancement as appropriate. Valley Water will develop annual work plans for juvenile rearing habitat enhancement for AMT review, the first of which will be prepared following approval of this FHRP. The process and schedule for juvenile rearing habitat enhancements are included in Chapter 6 *Adaptive Management Program*.

For Stevens Creek, juvenile rearing habitat enhancement measures would be integrated with the spawning gravel augmentation program, such that high-quality spawning habitat is provided adjacent to suitable initial fry and juvenile rearing habitat. This placement could reduce the potential for steelhead fry to be forced downstream to less-suitable habitats during winter flows (Wheaton et al. 2004), would ideally continue to provide juvenile rearing habitat during low-flow conditions in summer, and would help sort and retain augmented gravels. This strategy would help address previously identified potential limiting factors for steelhead in Stevens Creek, including habitat availability in summer and a lack of suitable instream cover for juveniles (Entrix 2000; Stillwater Sciences 2004). Large woody debris in particular has been identified as a limiting factor in the creek (Abel 2011).

Flosi et al. (2010) provide general types of habitat improvement structures that could be considered for improving instream cover and habitat complexity. Potential enhancement measures could include, among others, plunge weirs, boulder clusters and bank-placed boulders, single and opposing wing-deflectors, and log cover, depending on site-specific geomorphologic and hydraulic conditions. These types of enhancements would be consistent with addressing potential limiting factors for juvenile steelhead in Stevens Creek identified by previous investigators. In addition, some of these habitat features could provide additional benefits to spawning and adult holding habitats.

Valley Water produced a study identifying specific enhancement restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. As described in Chapter 6 *Adaptive Management Program*, specific rearing enhancement measures would be implemented after additional studies are conducted, and after actions are screened and ranked through the AMP.

3.7 Other Watershed-specific Improvements

The Settlement Agreement identifies three additional projects for the Stevens Creek watershed that Valley Water has implemented or proposes to implement. These are discussed in the following sections.

3.7.1 Portable Multiport Outlet – FHRP Measure

The TAC identified a limited opportunity for summer temperature management downstream of Stevens Creek Reservoir based on the relatively small storage capacity and thermal stratification of the reservoir. With a single outlet at the bottom of the reservoir (current conditions), the amount of available water to manage stream temperature downstream and provide cooler water for cold-water fish such as steelhead is limited. The TAC proposed a multiport intake that draws water from multiple levels of the reservoir to allow

for increased flow releases from Stevens Creek Reservoir and improve cold-water pool management in the reservoir during summer.

In October 2009, Valley Water completed a temperature modeling study of Stevens Creek Reservoir and the downstream CWMZ to evaluate whether a multiport intake would allow for increased releases from the reservoir while still meeting water temperature objectives in the CWMZ. The study found that a second intake port would allow for an increase in the flow rate of releases from the reservoir. Because the highest elevation in the reservoir that would generally remain below the thermocline through summer is only 16 feet higher than the existing port, it was determined that a system with more than two ports would not be necessary. Based on modeling water temperature in the reservoir and CWMZ, using an average year in terms of end-of-May storage (2001), a maximum of 3.5 cfs could be released from the reservoir through summer while maintaining a 19°C or lower release temperature. Under a -two-port system, a maximum total of 4 cfs could be released from the two ports while maintaining a 19°C or lower release temperature. Further, in the *Final Planning Study Report* dated January 2010, Valley Water found that installing an operable intake structure that draws water from the cold hypolimnion (that is, existing lower elevation intake) and simultaneously from the warm epilimnion (that is, proposed upper elevation intake) would provide the opportunity to mix the outlet blend to the managed target temperature of 19°C while preserving cold-water pool volume later in summer/fall (that is, during September and October). This could provide an overall greater effective volume of water in the reservoir useable for the dual objectives of instream recharge and habitat management, and would provide a buffer against abnormally warm weather (air temperature) conditions during September and October.

Based on the results of the temperature modeling completed in 2009 and the follow-up planning study of 2010, implementation of this project is included as part of this FHRP.

Performance measures for the portable multiport outlet would depend on how the operations of the outlet are defined through the AMP. Operational rules would be defined to optimize the dual objectives of habitat management (including thermal habitat conditions) and instream recharge.

3.7.2 Hypolimneal Aeration – Early Implementation Project

A hypolimnetic oxygenation system was installed at Stevens Creek Reservoir in 2013 and 2014 to address anoxic conditions at the bottom of the reservoir. The oxygenation system is located near the outlet of the reservoir and improves dissolved oxygen. The oxygenation system and associated monitoring are primarily supporting the Guadalupe River Watershed Mercury TMDL by using Stevens Creek Reservoir as a background reference and comparing it to reservoirs affected by historical mercury mining operations. However, the resulting efforts are also consistent with the objective of the FAHCE program.

Details regarding the studies and actions taken for this project are included in Appendix B *Documentation of Completed Settlement Agreement Obligations*.

3.7.3 Trap-and-Truck Feasibility Study

The final Phase 1 effort identified in the Settlement Agreement for this watershed included a feasibility study of trap-and-truck operations at Stevens Creek Reservoir regarding upstream and downstream migration of steelhead. The study will be designed to:

> …evaluate the suitability of spawning and rearing habitat for steelhead trout above the reservoir; the practicality of moving steelhead trout above the reservoir and achieving successful out-migration; and the potential effects of such movement on existing steelhead trout populations in Stevens Creek.

The AMT would consider implementation of a trap-and-truck operation in Stevens Creek, if found to be feasible in the Phase 1 study, as part of future Phase 2 actions. Triggers for implementation of Phase 2 and 3 measures are discussed in Chapter 6 *Adaptive Management Program*.

3.8 Geomorphic Functions Enhancement Pilot Project – Early Implementation Project

At Stevens Creek, after a feasibility study, one pilot project was initiated in 2009 at Blackberry Farm implementing 2,100 feet of geomorphic restoration. The area of the project extends along Stevens Creek from Stevens Creek Boulevard to Blackberry Farm Park at San Fernando Avenue in Cupertino. The project was designed to remove fish barriers and concrete lining of the channel as well as realign and widen the channel, adding instream habitat features such as boulders and gravel.

Chapter 4 – Guadalupe River Watershed (Phase 1 Measures)

This chapter provides management objectives for the Guadalupe River watershed as well as discussion of watershed-specific Phase 1 measures designed to achieve the management objectives. Implementation status is included for each measure, as well as a brief overview of future Valley Water responsibilities.

4.1 Watershed-specific Objectives

Section 2.2 *FHRP Management Objectives* describes the primary objectives of the FAHCE program for the Three Creeks. The management objective for the Guadalupe River watershed is to restore and maintain healthy steelhead and Chinook salmon populations by providing:

- suitable spawning and rearing habitat for steelhead and Chinook salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River;
- suitable spawning and rearing habitat for Chinook salmon below Calero and Almaden Dams to their confluence with Lake Almaden;
- suitable spawning and rearing habitat for Chinook salmon in Los Gatos Creek from Camden Avenue[1] to its confluence with the Guadalupe River;
- adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat, and for outmigration of juveniles; and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP.

Under Settlement Agreement § 7.3, measurable performance objectives consistent with the Guadalupe River management objectives will be defined through the AMP process. As described in Settlement Agreement § 7.3, these performance objectives for the Guadalupe River watershed would correspond to those habitat qualities that will be affected by Valley Water facilities and operations, and that are within the Valley Water's control. As noted in Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)*, many in-basin and out-of-basin variables affect steelhead population abundance that are outside of Valley Water's control, such as simplified habitat conditions, stream crossings, urban runoff, harvest, hatchery practices, predation, other anthropogenic impacts, climate change, and ocean conditions. In particular, ocean productivity can have a substantial influence on year-to-year fluctuations in salmonid population abundance, irrespective of freshwater conditions (Lindley et al. 2009). Therefore, performance objectives would not include habitat qualities outside the control of Valley Water operations, nor would they include objectives that would be measured with broad population recovery thresholds. Measurable performance objectives would be set by the AMT to meet both the overall and the stream-specific management objectives described in the Settlement Agreement (§ 6.2.2 for overall management objectives and § 6.6 for Guadalupe River-specific objectives) and discussed earlier in this FHRP.

This chapter is focused on Phase 1 measures that have not been completed as early implementation actions. Phases 2 through 4 are discussed in Chapter 6 *Adaptive Management Program*, along with a description of those tools and methods that Valley Water is proposing for monitoring outcomes of implemented measures. Chapter 6 also provides preliminary performance objectives and measures, and associated rationale, for future consideration by the AMT for flow measures, fish passage facilities, and other nonflow measures.

[1] Although identified in the settlement agreement, Camden Avenue is upstream of the Camden Drop Structure, which is the end of anadromy.

Chapter 4 – Guadalupe River Watershed (Phase 1 Measures)

4.2 Guadalupe River Watershed Characteristics and Fisheries Habitat Conditions

This section describes the characteristics of the Guadalupe River watershed, and provides a brief overview of the watershed's historical and current conditions as they relate to fish habitat.

4.2.1 Watershed Characteristics

The Guadalupe River begins in the Santa Cruz Mountains on the west side of the County and covers approximately 170 square miles (59,000 acres). Four major tributaries that contribute flows are Calero, Alamitos, Guadalupe, and Los Gatos Creeks. Each is described below and shown in Figure 4-1 through Figure 4-4. Historical stream gage information along the Guadalupe River and tributaries is available from multiple locations (see Figure 4-2 through Figure 4-5). POI that were established by Valley Water to assess habitat conditions in 2016 (see Section 2.4 *Three Creeks Field Surveys*) are shown in Figure 4-1 through Figure 4-5. POI Reaches are identified by type(s) of fish habitat with potential to occur (that is, spawning, rearing, and/or migration corridor) and correspond to nearest downstream POI (for example, POI Reach CALE1 is the reach that occurs between POI CALE1 and POI CALE2 on Calero Creek).

4.2.1.1 Calero Creek

Calero Creek begins in the eastern Santa Cruz Mountains and flows into Calero Reservoir. Downstream of Calero Reservoir, Calero Creek flows northwest for approximately 4 miles before joining Alamitos Creek. Releases from Calero Reservoir are measured at its outlet (gage 5013; Figure 4-2).

4.2.1.2 Alamitos Creek

Alamitos Creek originates in the Santa Cruz Mountains, crossing the foothills before flowing approximately 7.6 miles into Almaden Reservoir in the upper watershed. Approximately 8.9 miles below Almaden Reservoir, after merging with Calero Creek, Alamitos Creek joins Guadalupe Creek to form Guadalupe River. Flow in Alamitos Creek is measured just upstream from Almaden Reservoir (gage 5015; Figure 4-2), and releases from Almaden Reservoir are measured at its outlet (gage 5016). Flows below the confluence with Calero Creek and prior to joining Guadalupe Creek are measured at gage 5070.

4.2.1.3 Guadalupe Creek

Guadalupe Creek originates in the Santa Cruz Mountains and is impounded by Guadalupe Reservoir. Although historically ephemeral, Guadalupe Creek downstream of the dam has become an approximately 5.9-mile perennial stream because of the operation of Guadalupe Reservoir. Guadalupe Reservoir releases are measured at its outlet (gage 5017; Figure 4-3). Guadalupe Creek is also measured approximately halfway between Guadalupe Dam off Hicks Road (gage 5043) and its confluence with Alamitos Creek. Masson Dam, located approximately 1.3 miles upstream of Almaden Expressway, is a diversion dam on lower Guadalupe Creek that conveys water into the Los Capitancillos Percolation Ponds. This dam was constructed in 1964 but was replaced by Valley Water in 1999–2000 with a diversion structure that included a fish ladder to allow fish passage upstream. Gages 5114 (at the fish ladder) and 5046 measure flows entering the Los Capitancillos Ponds diversion.

4.2.1.4 Los Gatos Creek

Los Gatos Creek originates in the Santa Cruz Mountains and flows through three reservoirs upstream to downstream: Lake Elsman, Lexington Reservoir, and Vasona Reservoir. Downstream of Vasona

Reservoir is the Camden Drop Structure (the end of anadromy) just north of the Camden Percolation Ponds. Los Gatos Creek flows into Guadalupe River approximately 5.8 miles below Vasona Reservoir. Flows from Los Gatos Creek are diverted to groundwater recharge ponds at Budd Avenue Ponds and at Oka, Camden, McGlincey, Page, and Sunnyoaks Ponds. Flows are measured with installed gages at multiple locations along Los Gatos Creek, including between Lexington and Vasona Reservoirs (5067; Figure 4-4); below Vasona Reservoir (5059); above and below diversions at the Los Capitancillos Percolation Ponds (5047, 5049, and 5053); at Camden Ponds (5055); and at Lincoln Avenue, prior to joining Guadalupe River (5050). The creek's confluence with Guadalupe River is just north of the interchange of I-280 and State Highway 87.

4.2.1.5 Guadalupe River

Guadalupe and Alamitos Creeks meet downstream of Lake Almaden to form Guadalupe River (Figure 4-3 and Figure 4-5). Below the confluence, Guadalupe River flows for approximately 5.9 miles before joining Los Gatos Creek and subsequently flowing to the Bay (Figure 4-1 and Figure 4-5). Flows from Guadalupe River are diverted to groundwater recharge at Alamitos and Guadalupe Ponds (Figure 4-3). Guadalupe River flow is measured downstream from the confluence of Guadalupe and Alamitos Creeks, just above the Alamitos Percolation Pond at gage 5088 (Figure 4-3 and Figure 4-5); above the Almaden Expressway (gage 5023; Figure 4-3); downstream from its confluence with Los Gatos Creek by U.S. Geological Survey (USGS) gage 11169000; and downstream from Norman Y. Mineta San Jose International Airport by USGS gage 11169025. Ultimately, the river discharges to the south bay via Alviso Slough in the community of Alviso, which is part of the City of San Jose.

Figure 4-1. Guadalupe River Watershed Regional Map

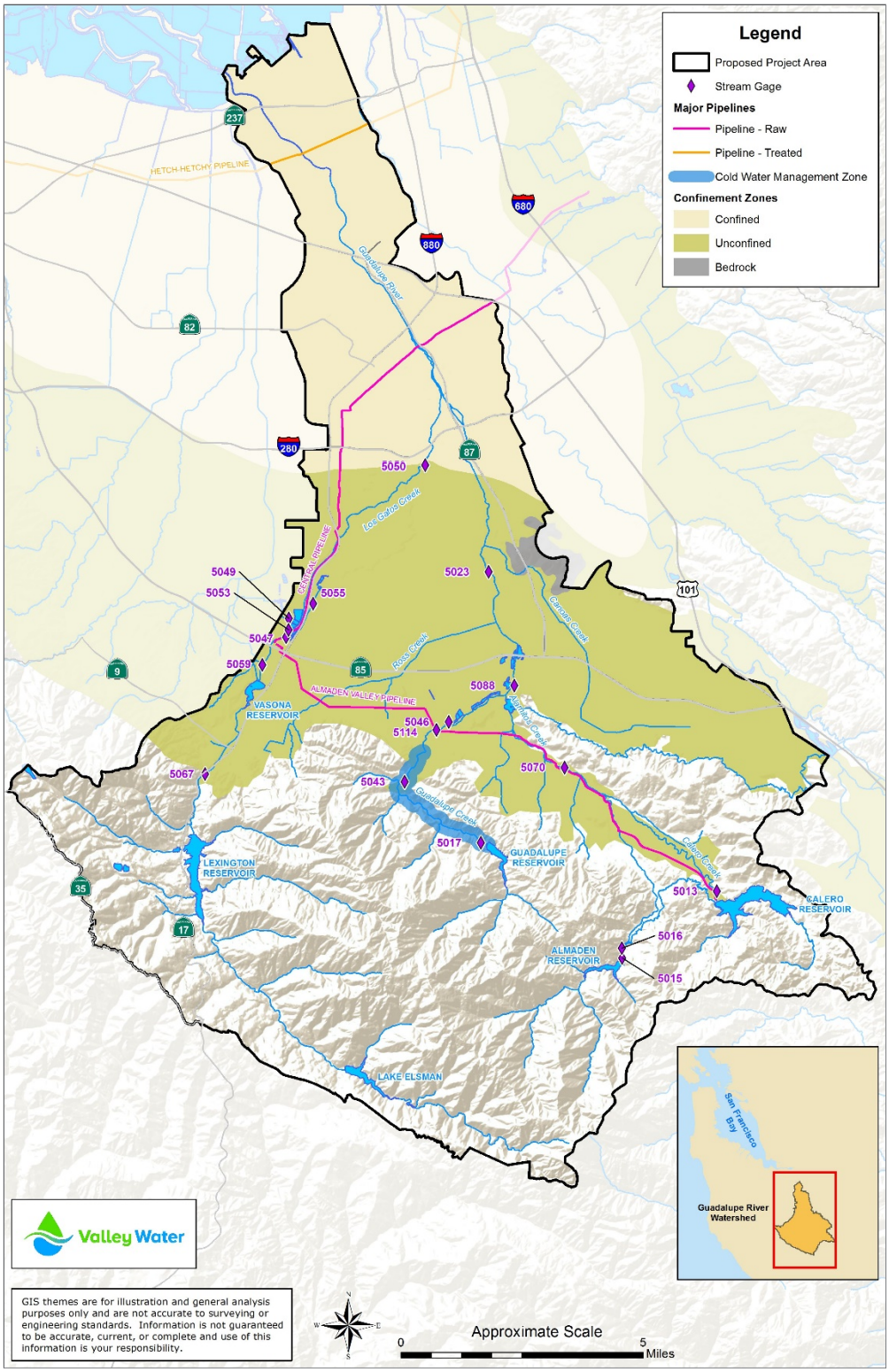


Figure 4-2. Calero and Alamitos Creeks Detail Map

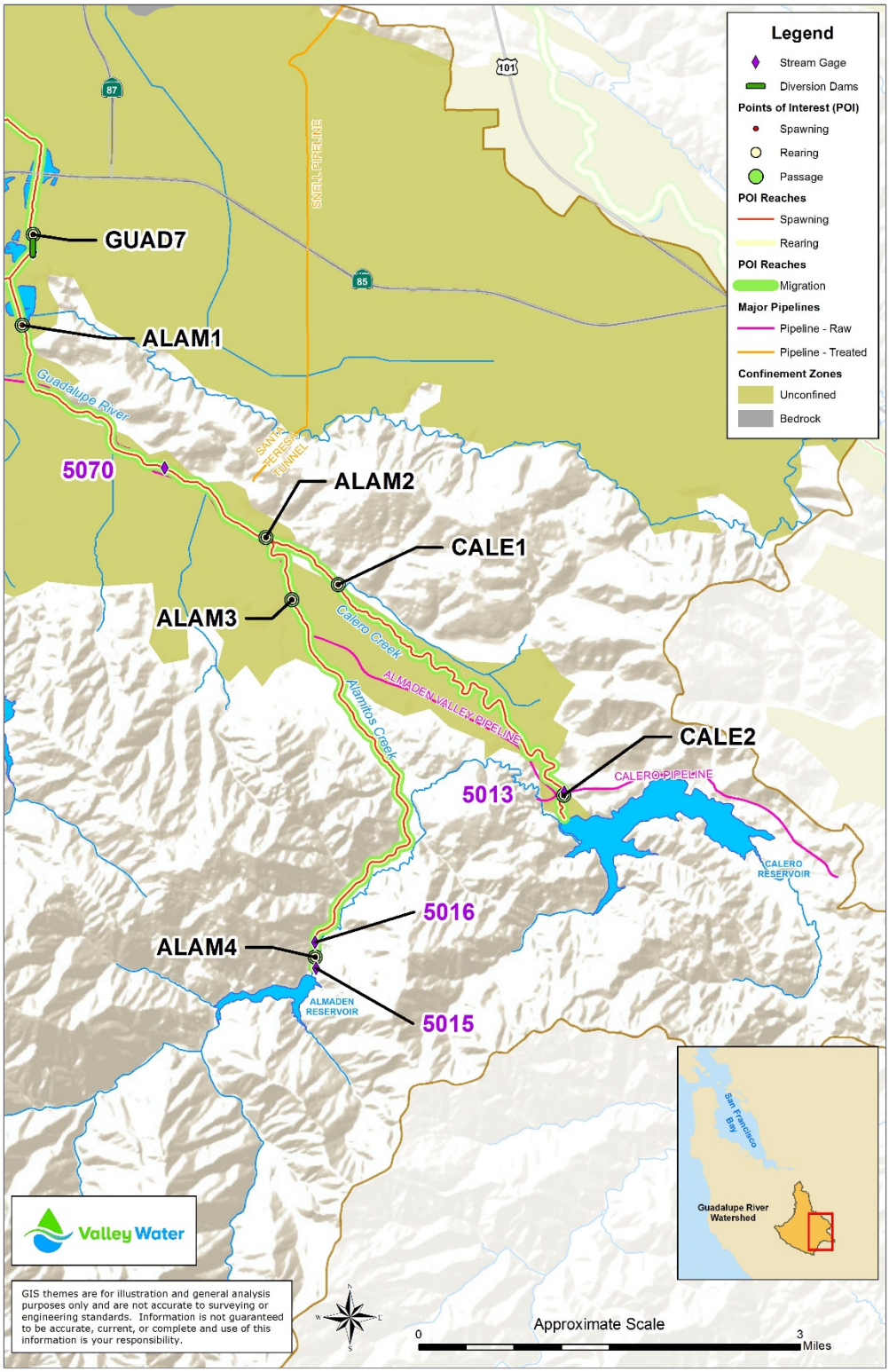


Figure 4-3. Guadalupe Creek Detail Map

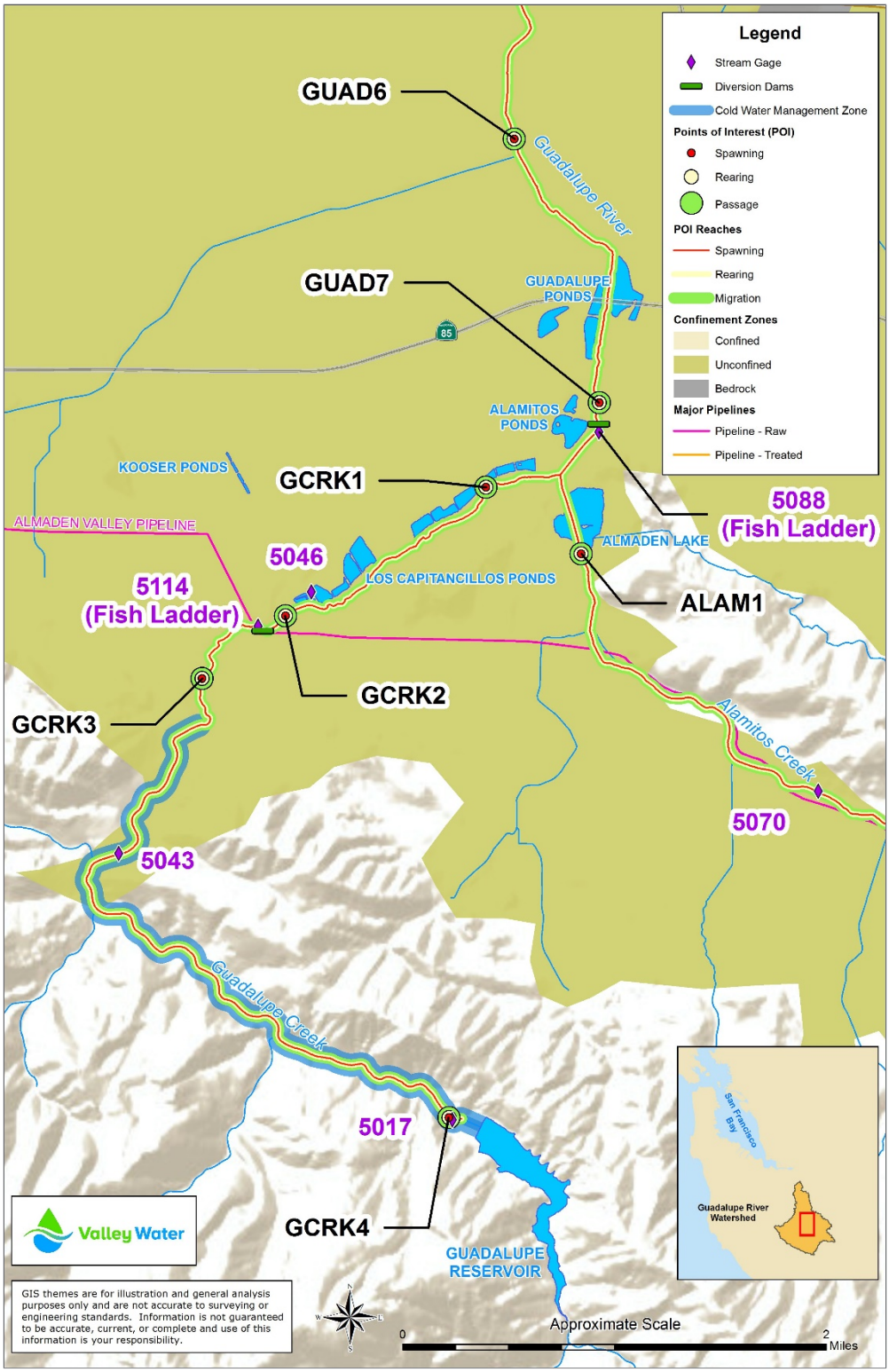


Figure 4-4. Los Gatos Creek Detail Map

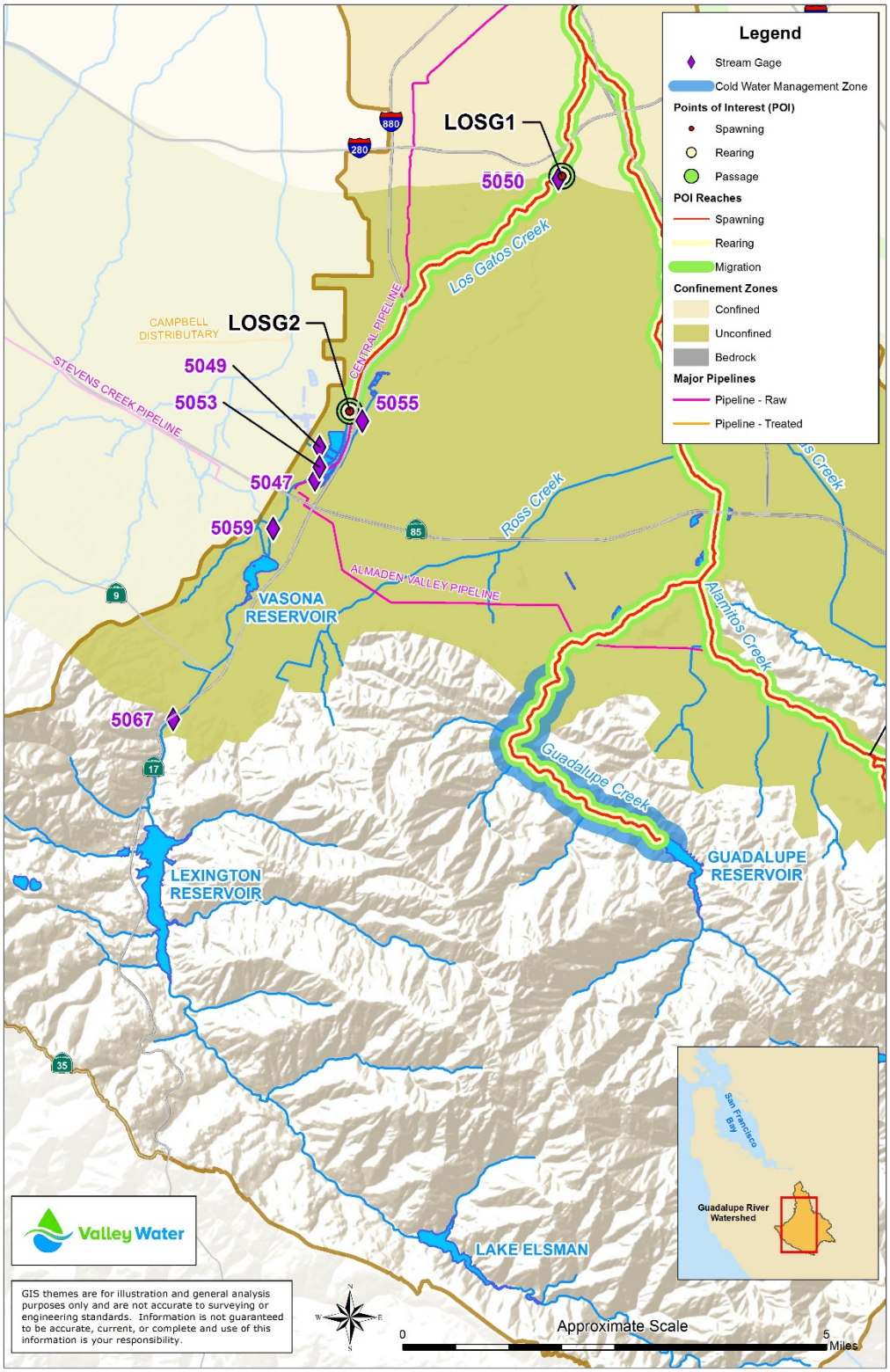
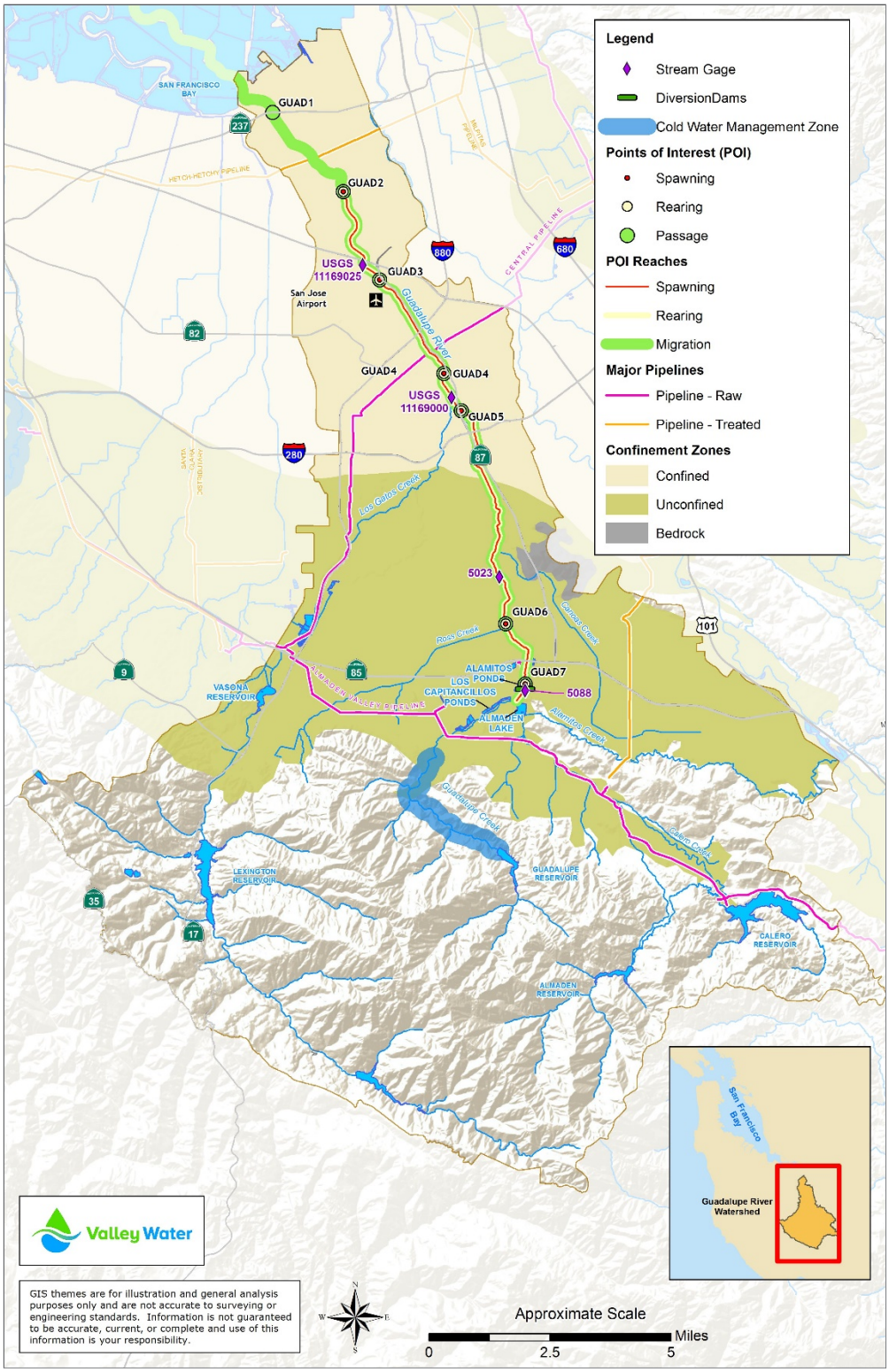


Figure 4-5. Guadalupe River Detail Map



4.2.2 Fisheries Habitat Conditions

Similar to Stevens Creek (see Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)*, Beller et al. (2010) reviewed historical aerial images and survey maps and concluded that the channel network in the Guadalupe River watershed was far less connected historically before substantial anthropogenic modification (that is, prior to the twentieth century). These records show that Guadalupe River diffused into multiple channels, spreading into sloughs through marshes and willow groves before forming into what is recognized today as Guadalupe River (Beller et al. 2010). Further, Los Gatos Creek, currently a tributary to Guadalupe River, likely did not have a direct connection to the river and instead terminated at a marsh upstream of the river (Beller et al. 2010).

SFEI & ASC (2013) evaluated the ecological condition of the Guadalupe River watershed, primarily using CRAM, and compared ecological conditions in urban and non-urban areas of the watershed. CRAM survey results indicate that ecological conditions are better functioning in the non-urban areas relative to the urban areas, particularly due to small and/or relatively low-quality buffers (the area adjoining the creek) and the presence of dams altering hydrology in the urban areas.

The stream channels in the Guadalupe River watershed were at least moderately entrenched (that is, lacking effective floodplains) in both the urban and non-urban areas, likely due to historical land uses (that is, agriculture and initial years of dam operation), in combination with more recent increases in flow due to urbanization, and channelization due to fabricated levees (SFEI & ASC 2013). However, moderately high scores for the Channel Stability CRAM metric indicated that channel incision is generally no longer occurring in both urban and non-urban areas. The apparent stabilization of entrenched channels could be due to the channels reaching equilibrium with the modified flow regimes and sediment supplies, and/or due to ongoing excavations to remove excess sediment in the streams (SFEI & ASC 2013).

An evaluation of the proportion of sampling sites being affected by stressors (anthropogenic perturbations within the environmental setting) found that the most prominent stressors affecting ecological conditions in the watershed were urban residential, transportation corridor, non-point source discharges, engineered channel, grading/compaction, and vegetation management (SFEI & ASC 2013).

Sources of risk to ecosystem conditions in the Guadalupe River watershed were identified to include lack of wide and complex riparian habitats, lack of floodplain connectivity, urban and agricultural runoff, and bank revetment (SFEI & ASC 2013). Reservoir operations were also found to affect ecological conditions, but specific impacts of the reservoirs in the Guadalupe River watershed were not addressed in the assessment (SFEI & ASC 2013). Although the streams were presumed to have generally adjusted to modified flow and sediment conditions, they were also found to be moderately to deeply entrenched, which increases the sensitivity of the channels to further increases in peak or mean annual flows (SFEI & ASC 2013). Urban runoff would be expected to continue to have negative impacts to water quality in the watershed unless urban runoff is retained and filtered prior to being discharged into the streams. The study also noted that additional encroachment of urban areas into riparian habitats would continue to reduce ecosystem services unless future development was designed to not impact riparian functions (SFEI& ASC 2013). These risks to stream ecological conditions likely would result in further incision of the channels and reductions in the functional width of riparian areas, which would reduce the biological and physical complexity of the channels and its riparian areas (SFEI & ASC 2013).

SFEI & ASC (2013) suggests that the most likely source of overall change in aquatic resources in the Guadalupe River watershed in the future will be due to climate change; climate change will likely influence all other sources of risk to stream ecosystem condition. Potential future changes in

precipitation and air temperature associated with climate change, such as increases in peak winter flows and increased evaporative losses, may exacerbate channel incision, increase the risk of flooding, and reduce the overall amount of water in the watershed. Aggradation in the lower reaches of Guadalupe River may be further enhanced by sea level rise, causing increases in the base elevation of the river (SFEI & ASC 2013). For the historically discontinuous streams, such as Guadalupe Creek, anthropogenic modifications to create a continuous channel connection to the Bay have improved access to these streams for steelhead and Chinook salmon (Grossinger et al. 2006).

In 2020, five species of native fish were captured within the Guadalupe River watershed (freshwater areas), including riffle sculpin (only in Guadalupe Creek), prickly sculpin, California roach, Sacramento sucker, and steelhead. Six species of non-native fish were observed among the five systems sampled, representing less than 2% of the total number of fish observed in 2020. These included mosquitofish, largemouth bass, bigscale logperch, inland silverside, channel catfish, and tule perch. Guadalupe River and Los Gatos Creek had the highest percentage of non-natives (16.7% and 14.6%, respectively; Valley Water 2021a). Fish species historically documented in Guadalupe River (including brackish areas) include Pacific lamprey, white sturgeon, hitch, Chinook salmon, threespine stickleback, shiner perch, longjaw mudsucker, staghorn sculpin, and starry flounder (Leidy 2007).

As discussed in the Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)*, Valley Water conducted habitat typing surveys during 1999 (Entrix 2000) and 2016 (Valley Water 2017) for the FAHCE program (Section 2.4 *Three Creeks Field Surveys*; Figure 2-1 *1999 Entrix and 2016 Valley Water Field Survey Study Areas*). Figure 4-6 provides an overlay showing both the 1999 Entrix Reaches and the 2016 Valley Water POI Reach delineations. The following sections summarize the results for each tributary and Guadalupe River, and describe facility improvements at each location. As discussed in Section 2.4.5 *2016 Valley Water Field Surveys* and detailed in Appendix O *Use of Habitat Data in Support of CEQA Analysis for FAHCE Fish Habitat Restoration Plan* located in the EIR, Valley Water's 2016 habitat data (Valley Water 2017) were generally used to represent baseline habitat conditions for FAHCE hydrologic modeling in most geomorphic reaches at all of Three Creeks. Two exceptions to this in the Guadalupe River watershed, where Entrix 2000 data were used for modeling the system, are the following:

1. The data collected by Entrix in 1999 were considered a better representation of Entrix Reach ALC1, as 85 habitat units, including riffles, flat-water, and pools, were mapped in 1999 and confirmed as present in 2016, although missed in the 2016 sampling effort. The subsampling conducted in 2016 consisted of only three habitat units and included no riffle habitat.
2. One section of Alamitos Creek (Entrix Reach ALC3) was not sampled in either study period due to lack of physical access. A surrogate in Guadalupe Creek (Entrix Reach GUC3) was selected as the most similar reach with available data. The two segments were most similar in channel slope, Entrix 2000 channel designation, and level of development when compared to other potential surrogate reaches.

In 1999, a fish ladder was installed at the Alamitos Percolation Pond at the Los Alamitos Percolation Ponds just below the confluence of Alamitos and Guadalupe Creeks (Figure 4-3). This ladder, along with the installation of a second fish ladder at Masson Diversion Dam on lower Guadalupe Creek in 2000, has provided potential access to more than 18 additional miles of steelhead spawning and rearing habitat in Guadalupe, Calero, and Alamitos Creeks.

4.2.2.1 Calero Creek

Calero Creek was delineated into two reaches by Entrix (2000) for the 1999 surveys (Figure 4-6). Entrix Reach CAC1 is located between Calero Creek's confluence with Alamitos Creek and its

crossing of Harry Road, and Entrix Reach CAC2 extends from Harry Road upstream to the Calero Reservoir release point.

The proportion of riffle habitat units identified by Entrix (2000) was approximately 27% in Entrix Reach CAC1 and less than 4% in Entrix Reach CAC2. Flat-water units represented the highest proportions of habitat types in both reaches (that is, approximately 47% in Entrix Reach CAC1 and 73% in Entrix Reach CAC2; Entrix 2000). Pool units represented approximately 26% in Entrix Reach CAC1 and 23% in Entrix Reach CAC2 (Entrix 2000).

Food transport, cover, and high velocities were identified as the primary constraints to suitable habitat for juvenile salmonid rearing in Calero Creek. The proportional area of each habitat type by reach estimated to be suitable for juvenile salmonids ranged from approximately 3% to 19% (Entrix 2000). Less than 1% of the total area surveyed in Calero Creek was considered to be potential spawning habitat (Entrix 2000).

During September 2016, Valley Water conducted habitat surveys in Calero Creek, which included habitat typing according to Flosi et al. (1998) and collection of additional habitat data for the purpose of estimating indices of habitat suitability and availability by lifestage. Valley Water (2016) surveyed approximately 7% of the length of Entrix Reach CAC1 (which ends at the Valley Water's POI Reach CALE1) and 5% of the length of Entrix Reach CAC2 surveyed during 1999.

Out of five habitat units surveyed during 2016, three were flat-water units and two were pool units. The distribution of habitat type proportions reported by Valley Water (2016) and Entrix (2000) in Calero Creek were statistically significantly different in Entrix Reach CAC1, but were not significantly different in Entrix Reach CAC2 (Valley Water 2017).

4.2.2.2 Alamitos Creek

Alamitos Creek was delineated into three reaches by Entrix (2000) for the 1999 surveys (Figure 4-6). Entrix Reach ALC1 extended from Lake Almaden upstream to near the intersection of Winterset Way and Camden Avenue. Entrix Reach ALC2 extended up to and beyond Harry Road, and Entrix Reach ALC3 extended upstream from Entrix Reach ALC2 to Almaden Reservoir. However, Entrix Reach ALC3 could not be surveyed in 1999 or 2016 due to the presence of private property.

The proportion of riffle habitat units identified by Entrix (2000) was approximately 17% in Entrix Reach ALC1 and 30% in Entrix Reach ALC2. Flat-water units represented the highest proportions of habitat types in both reaches (that is, approximately 48% in Entrix Reach ALC1 and 42% in Entrix Reach ALC2; Entrix 2000). Pool units represented approximately 35% in Entrix Reach ALC1 and 28% in Entrix Reach ALC2 (Entrix 2000).

Insufficient food transport, instream shelter, and water depth were identified as the major limiting factors for juvenile rearing habitat in Alamitos Creek (Entrix 2000). The proportional area of each habitat type by reach estimated to be suitable for juvenile salmonids ranged from approximately 2% to 7% (Entrix 2000). Just over 1% of the total area surveyed in Alamitos Creek was considered to be potential spawning habitat (Entrix 2000).

During September 2016, Valley Water conducted another series of habitat surveys in Alamitos Creek. Valley Water (2016) surveyed approximately 13% of the length of Entrix Reach ALC1 and 8% of the length of Entrix Reach ALC2 surveyed during 1999.

The distribution of habitat type proportions reported by Valley Water (2016) and Entrix (2000) in Alamitos Creek were statistically significantly different in both Entrix Reaches ALC1 and ALC2 (Valley Water 2017; Figure 4-6). Differences in habitat type proportions between the two surveys included a higher proportion of riffle habitat units in Entrix Reach ALC1, and a higher proportion of flat-water units

in Entrix Reach ALC2 during the 2016 surveys relative to the 1999 surveys. Also, no pool habitat units were identified during the 2016 surveys in Entrix Reach ALC2.

4.2.2.3 Guadalupe Creek

Guadalupe Creek was delineated into three channel reaches by Entrix (2000) for the 1999 surveys (Figure 4-6). Entrix Reach GUC1 extended from the confluence with Guadalupe River to Meridian Avenue. Entrix Reach GUC2 extended from Meridian Avenue to Camden Avenue, and Entrix Reach GUC3 extended from Camden Avenue upstream to the outlet structure at Guadalupe Reservoir.

The proportion of riffle habitat units identified by Entrix (2000) by reach ranged from approximately 16% to 22%. The proportion of flat-water units by reach ranged from approximately 30% to 40% (Entrix 2000). Pool units represented the highest proportions of habitat units by reach, ranging from approximately 44% to 49% (Entrix 2000).

Insufficient food transport, water depth, and instream cover were the dominant limiting factors identified for juvenile rearing habitat (Entrix 2000). The proportional area of each habitat type by reach estimated to be suitable for juvenile salmonids ranged from approximately 2% to 9% for most habitat types (Entrix 2000). Approximately 4% of the total area surveyed in Guadalupe Creek was considered to be potential spawning habitat (Entrix 2000).

During September 2016, Valley Water conducted another series of habitat surveys in Guadalupe Creek. Valley Water (2016) surveyed approximately 17% of the length of Entrix Reach GUC1, 14% of the length of Entrix Reach GUC2, and 6% of the length of Entrix Reach GUC3 surveyed during 1999.

The distribution of habitat type proportions reported by Valley Water (2017) and Entrix (2000) in Guadalupe Creek were statistically significantly different in all three Entrix reaches (Valley Water 2017; Figure 4-6). Differences in habitat type proportions between the two surveys included higher proportions of riffle and flat-water habitat units and lower proportions of pool units in all reaches during 2016 relative to 1999.

As mentioned in previous sections, in 2000, the Masson Fish Ladder at the Masson Diversion Dam on Guadalupe Creek was completed, allowing fish access upstream of Masson Dam (Figure 4-3).

4.2.2.4 Los Gatos Creek

Los Gatos Creek was surveyed in 1999 as one reach, from the confluence of Los Gatos Creek and Guadalupe River upstream to the Camden Drop Structure (north of Highway 85; Entrix 2000; Figure 4-4 and Figure 4-6). The Camden Drop Structure is the upstream limit of anadromous fish on Los Gatos Creek.

The proportion of riffle, flat-water, and pool habitat units identified by Entrix (2000) was approximately 15%, 37%, and 48%, respectively. Insufficient food transport, water depth, and instream cover were the dominant limiting factors identified for juvenile rearing habitat (Entrix 2000). The proportional area of each habitat type estimated to be suitable for juvenile salmonids was approximately 14%, 5%, and 1% for riffle, flat-water, and pool habitat units, respectively (Entrix 2000). Less than 1% of the total area surveyed in Los Gatos Creek was considered to be potential spawning habitat (Entrix 2000).

During September 2016, Valley Water conducted additional habitat surveys in Los Gatos Creek; approximately 7% of the length of Los Gatos Creek that was surveyed during 1999 was surveyed in 2016 (Valley Water 2017).

The distribution of habitat type proportions reported by Valley Water (2017) and Entrix (2000) in Los Gatos Creek was statistically significantly different (Valley Water 2017). Differences in habitat type

proportions between the two surveys included higher proportions of riffle habitat units and lower proportions of flat-water and pool units during 2016 relative to 1999.

4.2.2.5 Guadalupe River

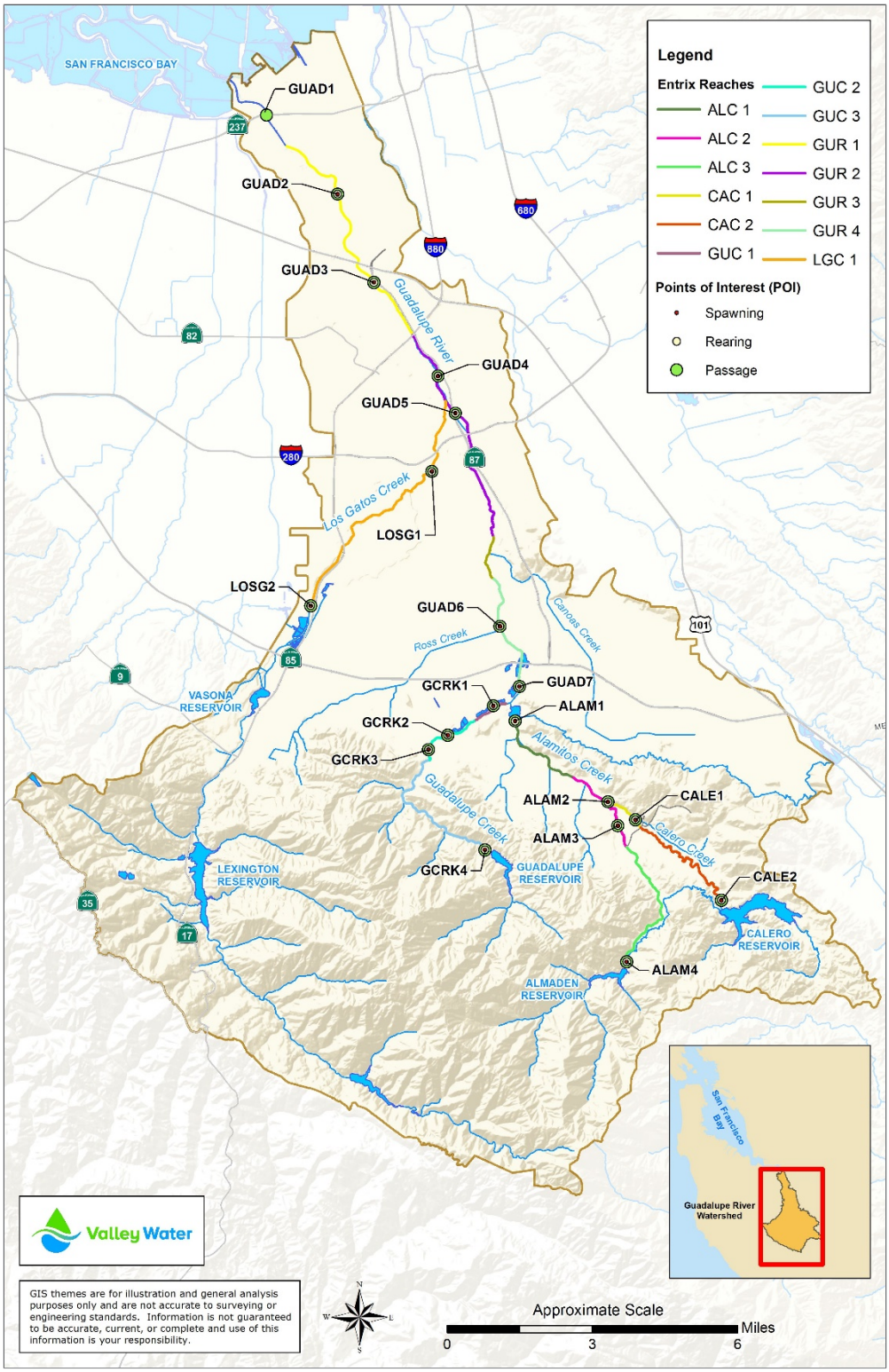
The Guadalupe River was delineated into four reaches and surveyed from Tasman Drive to the Blossom Hill Drop Structure (approximately 14 miles; Figure 4-5 and Figure 4-6). An approximately 2-mile-long degraded section of the river between Willow Street and Almaden Expressway was not surveyed.

The proportion of riffle habitat units identified by Entrix (2000) by reach ranged from approximately 1% to 7%. The proportion of flat-water units by reach ranged from approximately 15% to 48% (Entrix 2000). Pool units represented the highest proportions of habitat units by reach, ranging from approximately 50% to 78% (Entrix 2000).

Insufficient food transport and instream cover were the dominant limiting factors identified for juvenile rearing habitat, in addition to poor water quality conditions in the most downstream reach (Entrix 2000). The proportional area of each habitat type by reach estimated to be suitable for juvenile salmonids ranged from approximately 2% to 20% (Entrix 2000). Less than 1% of the total area surveyed in Guadalupe River was considered to be potential spawning habitat (Entrix 2000).

During August and September 2016, Valley Water conducted habitat surveys in Guadalupe River. Valley Water (2017) surveyed approximately 21% of the length of Entrix Reach GUR1, 14% of the length of Entrix Reach GUR2, 9% of the length of Entrix Reach GUR3, and 18% of the length of Entrix Reach GUR4 surveyed during 1999.

Figure 4-6. Guadalupe Creek Channel Reaches (Entrix 2000 and Valley Water 2016)



The distribution of habitat type proportions reported by Valley Water (2016) and Entrix (2000) in Guadalupe River were not statistically significantly different in Entrix Reach GUR1, but were statistically significantly different in all of the other Entrix Reaches (Valley Water 2017). Differences in habitat type proportions between the two surveys included higher proportions of flat-water and riffle habitat units and lower proportions of pool units during 2016 relative to 1999.

4.3 Existing Watershed Diversions and Proposed Changes to Water Rights

4.3.1 Diversions

In the Guadalupe River watershed, Valley Water operates three dam diversions: Alamitos Percolation Pond Diversion and Kirk and Masson Dam Diversions (Figure 4-7). The primary purpose of all Valley Water dam diversion facilities is to divert water for groundwater recharge. In addition, the Almaden-Calero Canal Diversion diverts water between reservoirs to maximize storage.

4.3.1.1 Alamitos Percolation Pond Diversion

The Alamitos Percolation Pond Diversion is an instream facility downstream of the confluence with Alamitos and Guadalupe Creeks (Figure 4-3 and Figure 4-7). The existing dam is a temporary flashboard dam and includes a fish ladder. The structure controls flow for instream recharge and flow to offstream groundwater recharge at Alamitos Pond. The permitted diversion is 3,302 AFY from November 15 to May 1 for domestic water supply and irrigation beneficial uses under Water Rights Permit #3009 and CDFW-LSAA #1600-2009-0409-R3.

4.3.1.2 Kirk Dam Diversion

The Kirk Dam Diversion is located on Los Gatos Creek downstream of the Vasona Reservoir and diverts Los Gatos Creek flows to the Kirk, Page, Camden, Sunnyoaks, and Budd Percolation Ponds on the west and to the Oka and McGlincey Ponds on the east (Figure 4-4 and Figure 4-7). The dam is a 90-foot-long by 7-foot-high steel flashboard dam on a 36-foot-wide concrete foundation. Two sluice gates on the east side of the channel are used to release water to Los Gatos Creek. Releases to the Kirk and Page Percolation Ponds are made through a diversion pipe covered with a trash rack. The permitted diversion is up to 9,090 AFY (not to exceed 80 cfs in flow) from November 15 to May 1 for domestic and irrigation beneficial uses under Water Rights Permit #3010 and LSAA #1600-2009-0412-R3.

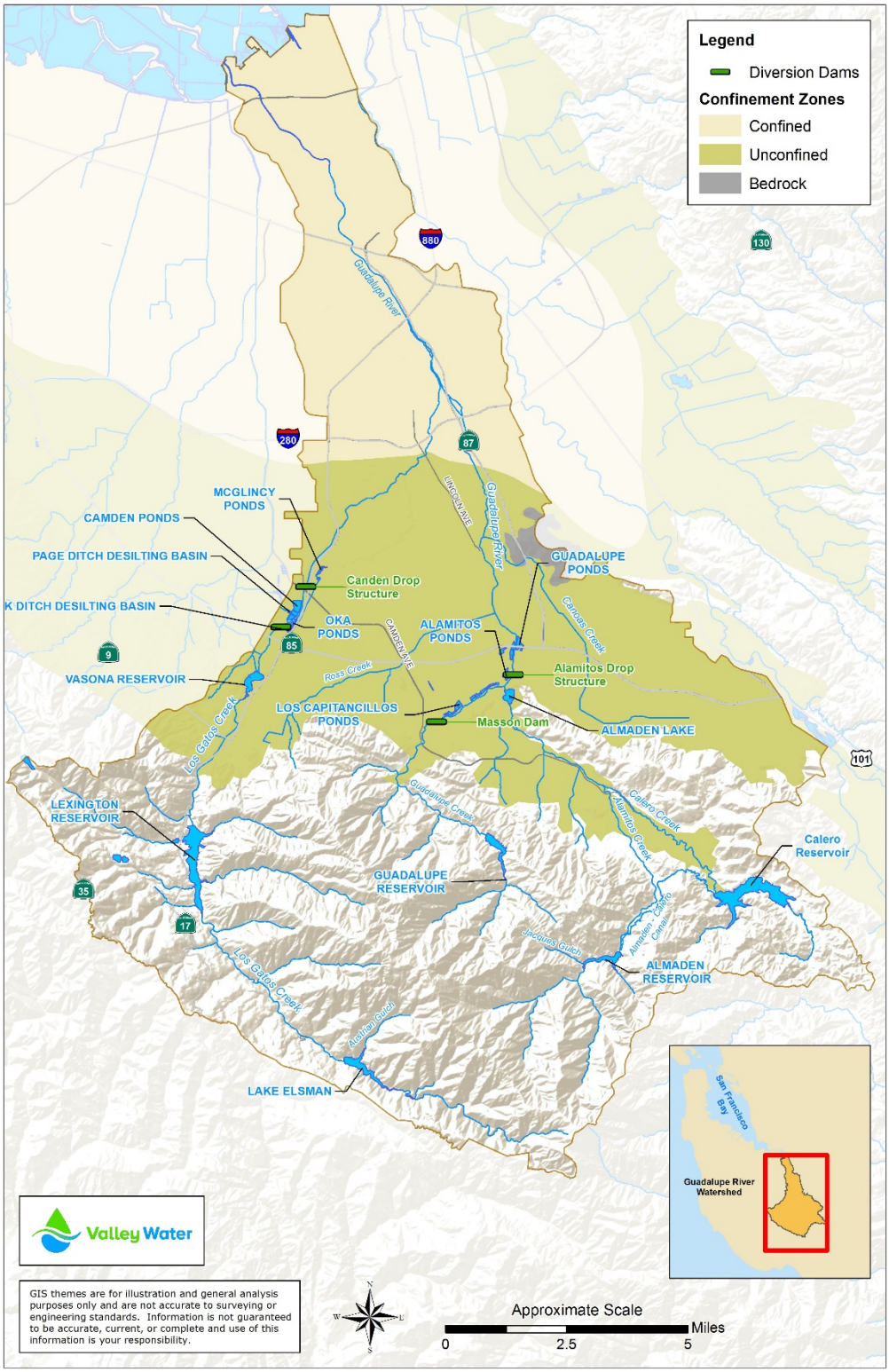
4.3.1.3 Masson Dam Diversion

The Masson Dam Diversion on Guadalupe Creek diverts flows to offstream recharge at Los Capitancillos and Kooser Ponds (Figure 4-3 and Figure 4-7). The dam includes a fish ladder. Valley Water is permitted to divert up to 323 AFY (not to exceed 0.77 cfs) from October 1 to May 1 for industrial, domestic water supply, and irrigation beneficial uses under Water Rights Permit #5428 and LSAA #1600-2009-0414-R3.

4.3.1.4 Almaden-Calero Canal Diversion

On Alamitos Creek, when Almaden Reservoir approaches capacity, the Almaden-Calero Canal moves water from Almaden Reservoir to Calero Reservoir to optimize storage. The Almaden-Calero Canal diversion is a permitted diversion of Alamitos Creek for 6,000 AFY from December 1 to April 30 under Water Rights Permit #4920.

Figure 4-7. Guadalupe River Watershed Diversions



4.3.2 Proposed Changes to Valley Water's Water Rights

Nine water rights change petitions are proposed for the Guadalupe River watershed (Table 4-1).

Table 4-1. Proposed Water Rights Change Petitions for Guadalupe River Watershed

Permit Number	Facility/Water Source	Priority Date	Current Appropriation (AFY)	Diversion Period	Existing Purpose of Use	Change Proposed in Petition
3009	Alamitos Percolation Ponds/ Guadalupe River	08/01/1927	3,302	11/15 to 05/01	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
4917	Guadalupe Reservoir/ Guadalupe Creek	12/09/1931	3,500	12/01 to 04/30	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
5428	Masson Dam/ Guadalupe Creek	11/16/1938	323 (0.77 cfs)	10/01 to 05/01	Irrigation, Domestic and Industrial	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
4916	Almaden Reservoir/ Alamitos Creek	12/09/1931	2,500	12/01 to 04/30	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
4920	Almaden-Calero Canal/ Alamitos Creek	09/11/1934	6,000 (not to exceed 100 cfs)	12/01 to 04/30	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
4919	Calero Reservoir/ Calero Creek	09/11/1934	3,500	12/01 to 04/30	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
3010	Kirk Dam/ Los Gatos Creek	08/01/1927	9,090 (not to exceed 80 cfs)	11/15 to 05/01	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
4921	Vasona Reservoir/ Los Gatos Creek	07/10/1935	1,684	12/01 to 06/01	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement

Permit Number	Facility/Water Source	Priority Date	Current Appropriation (AFY)	Diversion Period	Existing Purpose of Use	Change Proposed in Petition
7689	Lexington Reservoir/ Los Gatos Creek	03/03/1947	30,000	11/01 to 05/15	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement

AFY = acre-feet per year; cfs = cubic feet per second; Domestic = Domestic Water Supply

4.4 Flow Measures and Reservoir Re-operation Rule Curves

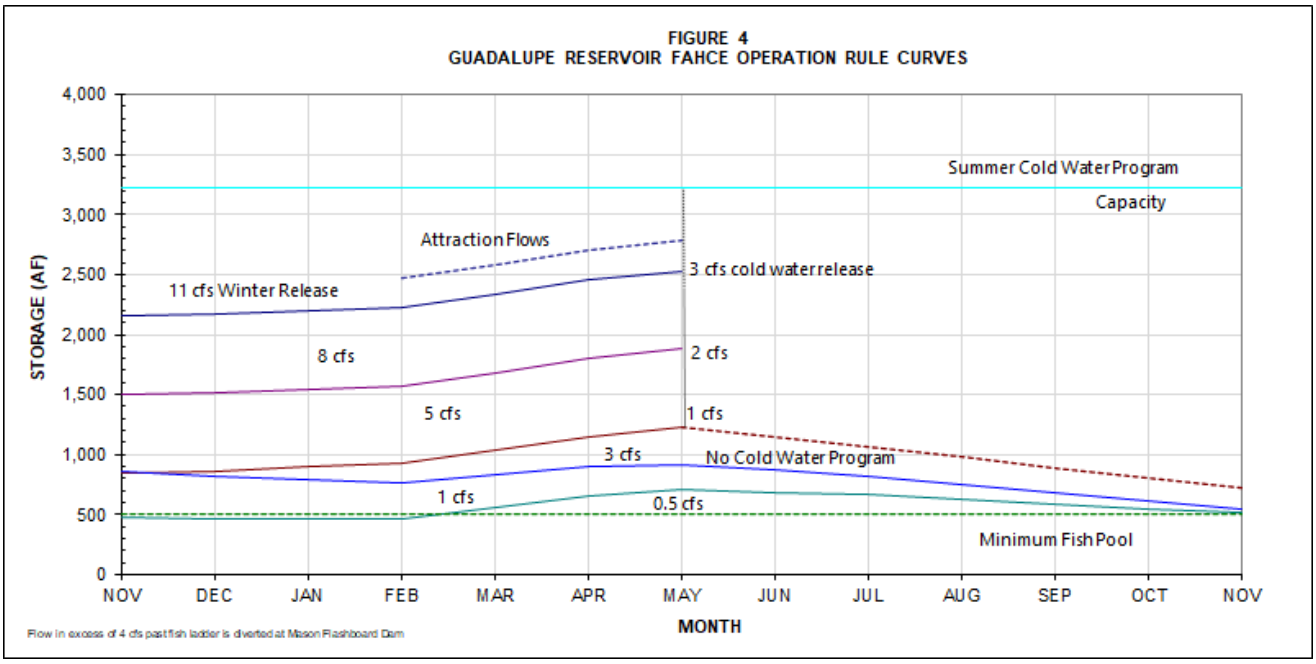
Proposed flow measures and Reservoir Reoperation Rule Curves are provided for all storage sites on Guadalupe River. Maps of stream gages referenced for each reservoir discussed in the following sections are provided in Section 4.2.1 *Watershed Characteristics* in Figure 4-2 through Figure 4-5.

DSOD seismic-related storage restrictions for the Guadalupe River watershed were placed on both Guadalupe and Calero Reservoirs in 2012. Since then, the restricted capacity for the Guadalupe Reservoir has been capped at 65% of full storage (unrestricted capacity is 3,415 AF) equaling approximately 2,134 AF. The Guadalupe Dam Seismic Retrofit program (see Section 1.3.1 *Dam Safety Operations Restrictions*) was initiated in 2013 through the Valley Water Capital Improvement Plan to design and construct a seismic retrofit of the dam. Calero Reservoir was similarly capped by DSOD in 1992 at 46% of capacity (unrestricted capacity is 9,934 AF) equaling approximately 4,414 AF. Capital funds were also allocated through the Valley Water Capital Improvement Plan for design and construction of a seismic retrofit. Dam safety operations restrictions were placed by DSOD on Almaden Reservoir with a restricted capacity capped at 93% (unrestricted capacity is 1,586 AF), equaling approximately 1,444 AF.

4.4.1 Guadalupe Reservoir

Guadalupe Dam and Reservoir on Guadalupe Creek has a capacity of 3,415 AF and a minimum fish pool of 500 AF. Under the FHRP, Guadalupe Dam would be operated in accordance with the Reservoir Reoperation Rule Curves (Figure 4-8). This is the only facility that includes Reservoir Reoperation Rule Curves for summer cold-water releases in the Guadalupe River watershed; therefore, graduated winter base rule curves are designed to maintain cold-water storage to support summer releases to meet temperature goals set for the CWMZ downstream; the CWMZ extends from the outlet of Guadalupe Reservoir to POI GCRK3 (Figure 4-3). The reservoir release rate for a particular date would depend on the reservoir storage volume on that date. The release rates shown in green, particularly in winter, are minimums.

Figure 4-8. Guadalupe Reservoir Reoperation Rule Curves



Note: Attraction flows are the same as pulse flows.

4.4.1.1 Present Reservoir Operations

Historically, Guadalupe Reservoir has been operated to provide local water for instream and offstream groundwater recharge. During the winter diversion period, water is captured in excess of releases to maximize storage on April 30. Summer-season operations meet groundwater recharge objectives or provide storage volume for the next diversion period. Rediversions are made at Masson Diversion (Figure 4-3) to supply several offstream recharge ponds.

4.4.1.2 Winter Base Flow (Winter Releases)

From November 1 to April 30, Valley Water would provide winter base flows by releasing water from Guadalupe Reservoir in accordance with Reservoir Reoperation Rule Curves (Figure 4-8). A minimum release of 3 cfs from Guadalupe Reservoir (as measured at stream gage 5017; Figure 4-3) is expected by Valley Water to extend Guadalupe Creek flow 5.7 miles to the Alamitos Diversion on Guadalupe River.

Winter base flow releases would depend on the storage volume of Guadalupe Reservoir and where that storage volume falls within the range of the graduated rule curves. For example, if the storage volume were above the highest winter Reservoir Reoperation Rule Curve (shown in black in Figure 4-8), 11 cfs would be released. As storage decreases, or if storage never reaches the 11 cfs winter base rule curve, the release would be reduced. Releases would be monitored and recorded at stream gage 5017 downstream of Guadalupe Dam. Flows might be diverted at the Masson Diversion provided that adequate fish passage flows are flowing through the fish ladder.

4.4.1.3 Pulse Flow (Attraction Flows)

Pulse flows of 50 cfs would be released from the outlet of Guadalupe Reservoir between February 1 and April 30 when both of the following criteria are met:

- Reservoir storage is at least 250 AF higher than the 11 cfs winter Reservoir Reoperation Rule Curve for the date.
- Stream and weather conditions are such that it is safe to release 50 cfs for a 5-day period.

The reservoir would be operated in this manner until there have been two periods of 5 consecutive days of flows greater than 50 cfs measured at stream gage 5017 during that water year. Each spill event in excess of 50 cfs for 5 consecutive days between February 1 and April 30 would also be considered a pulse flow event.

4.4.1.4 Summer Rearing Flows and Temperature Management (Cold Water Management Program)

Summer releases from Guadalupe Reservoir would be made from May 1 to October 31 as available cold-water storage would allow, according to the Reservoir Reoperation Rule Curves (Figure 4-8). These releases are designed to support a CWMZ that extends 3.3 miles from the dam to Camden Avenue (near POI GCRK3; Figure 4-3).

For the purpose of summer releases, the cold-water reservoir storage (14°C or less) would be determined each year by temperature surveys performed in the reservoir between April 15 and 30. Cold water would be released at a constant rate so that water temperatures do not exceed a daily average of 18°C in the CWMZ. Winter base rule curves are designed to achieve cold-water storage to support summer releases.

Additional reservoir temperature profiles would be established on a monthly basis from June through October, and releases would be adjusted to correspond to changes in the measured hypolimnetic volume. If the available cold-water volume would produce a cold-water flow release of less than 1 cfs throughout summer, releases would not be limited to the CWMZ, and releases for the purpose of recharging to the capacity of the system would be allowed. In addition, imported water via the Almaden Valley Pipeline (outlet located below Camden Avenue) into Guadalupe Creek for groundwater recharge would be allowed.

4.4.1.5 Diversion Operations

Diversion flow reoperations would modify diversion flow rules between the Masson Dam Diversion and the confluence with Guadalupe River to enhance channel depth, flow, and the area of wetted channel. Modifications in the Masson Dam reach, as well as flow rule modifications at the Alamitos Percolation Pond Diversion reach, both located on Guadalupe River, would extend the benefits of the winter base flows to reaches below the Masson and Alamitos diversions (Figure 4-3 and Figure 4-7). Valley Water proposes to modify the current LSAA (1600-2009-0414-R3) on the Masson Dam Diversion to incorporate winter rules (November 1 through April 30) such that bypass flows would provide adequate fish ladder flows or the minimum flow needed to maintain a hydrologic connection with Guadalupe River. The proposed Alamitos Percolation Pond Diversion bypass flows are consistent with the current LSAA (1600-2009-0409-R3) measures. Table 4-2 summarizes the minimum bypass flows for each location and the corresponding measurement point (that is, stream gage).

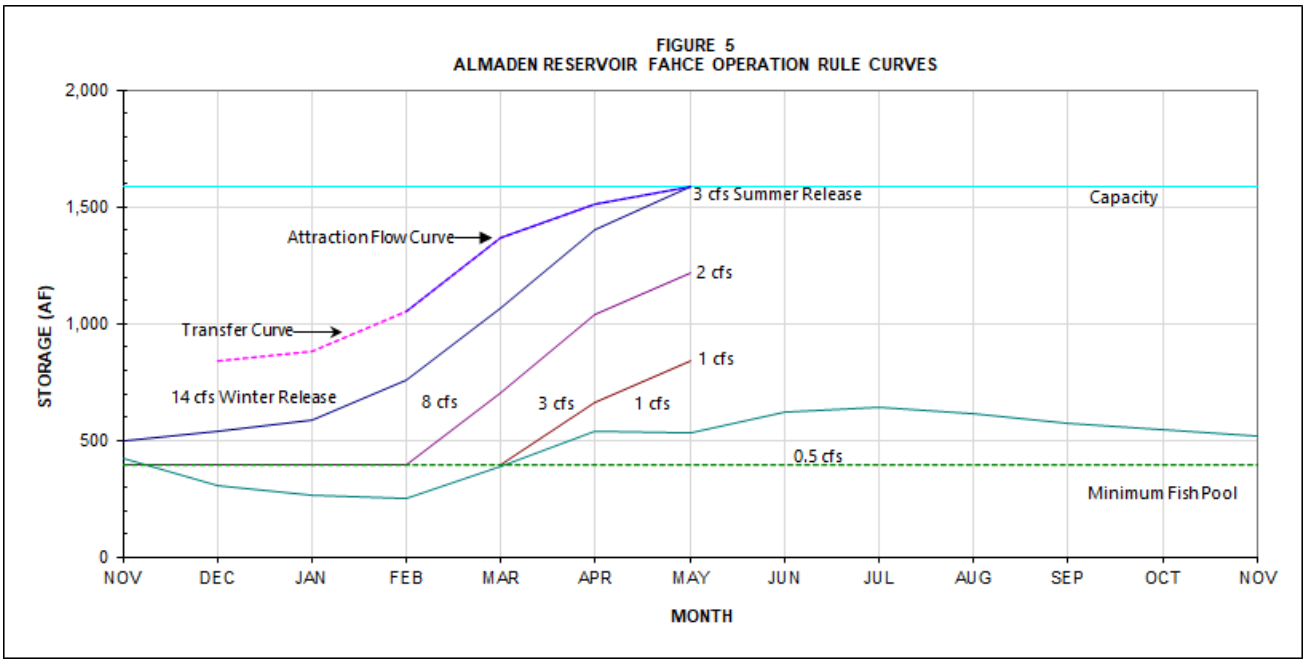
Table 4-2. Minimum Bypass Flow Requirements for the Masson and Alamitos Diversions

Facility	Minimum Bypass Flow
Masson Dam Diversion	3 cfs summer bypass and 4 cfs winter bypass mean daily fish ladder flows at gage 5114 (Figure 4-3), or minimum flows to maintain a hydrologic connection with Guadalupe River to support migration needs
Alamitos Percolation Pond Dam Diversion	5 cfs mean daily fish ladder flow at gage 5088 and maintain minimum ending flow requirements at gage 5023 downstream (1 cfs instantaneous minimum and 2.5 cfs daily average flow; Figure 4-3)

4.4.2 Almaden Reservoir

Almaden Dam and Reservoir, located on Alamitos Creek, has a capacity of 1,586 AF and a minimum fish pool of 400 AF. Under the FHRP, Almaden Dam (Figure 4-2) would be operated in accordance with the Reservoir Reoperation Rule Curves (Figure 4-9). The reservoir release rate for a particular date would depend on the reservoir storage volume on that date.

Figure 4-9. Almaden Reservoir Reoperation Rule Curves



4.4.2.1 Present Reservoir Operations

The winter-season objective has been to maximize storage on April 30. Summer operations are made to meet groundwater recharge objectives or to provide storage volume for the next diversion period. Rediversion occurs during summer at the Alamitos Percolation Pond Diversion (Figure 4-7) located further downstream on Guadalupe River. Almaden Reservoir is connected to Calero Reservoir via the Almaden-Calero Canal (Figure 4-2). Because the yield of the Alamitos Creek watershed is high relative to the size of the reservoir, the canal is operated to provide water to Calero Reservoir when storage at Almaden Reservoir reaches a specific level.

4.4.2.2 Winter Base Flow (Winter Releases)

From November 1 to April 30, Valley Water would provide winter base flows by releasing water from Almaden Reservoir in accordance with Reservoir Reoperation Rule Curves (Figure 4-9). A minimum release of 1 cfs from Almaden Reservoir (as measured at stream gage 5016) would extend Alamitos Creek flow approximately 8 miles from Almaden Dam to the Alamitos Percolation Pond Diversion. As possible, in all months of the year, releases would be made to achieve a minimum fish pool storage volume of 400 AF (Figure 4-9).

Winter base flow releases rates would depend on the storage volume of Almaden Reservoir shown by the graduated rule curves. For example, if the storage volume were above the highest winter Reservoir Reoperation Rule Curve (shown in dark blue in Figure 4-9), 14 cfs would be released. As storage decreases, or if storage never reaches the 14 cfs winter base rule curve, the release would be reduced. Release flows would be monitored and recorded at stream gage 5016 downstream of Almaden Dam.

4.4.2.3 Pulse Flow (Attractant Flow)

Pulse flows of 50 cfs would be released from Almaden Reservoir between February 1 and April 30 when both of the following criteria are met:

- Reservoir storage exceeds the pulse flow rule curve (which corresponds to the transfer curve) for the date.
- Stream and weather conditions are such that it is safe to release 50 cfs for a 5-day period.

The reservoir would be operated in this manner until there have been two periods of 5 consecutive days of flows greater than 50 cfs measured at stream gage 5016 during that water year. Each spill event in excess of 50 cfs for 5 consecutive days between February 1 and April 30 would also be considered a pulse flow event.

When the storage volume in Almaden Reservoir exceeds the pulse flow rule curve between December 1 and January 31, water would be transferred to Calero Reservoir via Almaden-Calero Canal (the pulse flow curve is noted as the Attraction Flow Curve in Figure 4-9 and is the same as the Water Transfer Curve). Pulse flows and water transfers to Calero Reservoir could occur simultaneously provided there is adequate storage above the curve to provide two pulse flows per season. Otherwise, if fewer than two pulse flows have occurred since the start of the current wet season, pulse flows would have priority over water transfers.

4.4.2.4 Summer Rearing Flows and Temperature Management (Summer Releases)

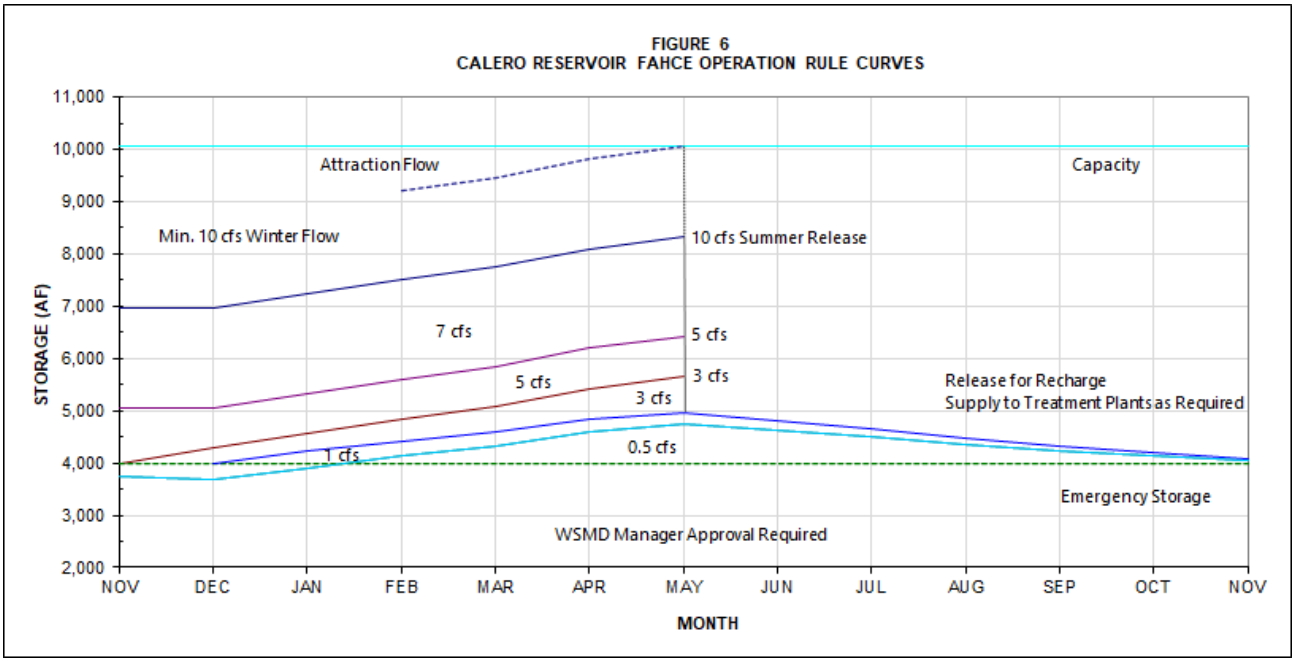
Alamitos Creek has no CWMZ; therefore, no additional temperature management releases are included in the proposed rule curves for summer at Almaden Reservoir. Releases would be made to meet a 400-AF minimum fish pool storage volume on December 1.

4.4.3 Calero Reservoir

Calero Reservoir, located on Calero Creek, has a capacity of 9,934 AF and an emergency storage of 4,000 AF. Under the FHRP, Calero Reservoir would be operated in accordance with the Reservoir Reoperation Rule Curves (Figure 4-10). The reservoir release rate for a particular date depends on the reservoir storage volume on that date. Imported water temporarily stored in Calero Reservoir would not be included in volume calculations for determining the appropriate Reservoir Reoperation Rule Curve to use. Similarly, if Valley Water were to use imported water to meet an operational commitment in lieu of local supply from the reservoirs, an equivalent volume of water would be

allocated to the imported water volume in the reservoir. The release rates shown in Figure 4-10, particularly in winter, are minimums.

Figure 4-10. Calero Reservoir Reoperation Rule Curves



4.4.3.1 Present Reservoir Operations

Depending on rainfall, the reservoir receives water from Almaden Reservoir via Almaden-Calero Canal to ensure that emergency storage objectives are met. Valley Water operates Calero Reservoir to provide local water for instream and offstream groundwater recharge. The reservoir also supplies the low-water distribution system that provides water supply reliability during emergencies. During the winter diversion period, water is captured in excess of release to maximize storage on April 30. Summer season releases are made to meet water supply needs and to provide storage volume for the next diversion period. Imported water might be supplied to the reservoir during the summer season. Downstream of the Alamitos-Guadalupe River confluence, rediversion occurs at the Alamitos Percolation Pond Diversion (Figure 4-7).

4.4.3.2 Winter Base Flow (Winter Flow)

From November 1 to April 30, Valley Water would provide winter base flows by releasing water from Calero Reservoir in accordance with Reservoir Reoperation Rule Curves (Figure 4-10). A minimum release of 3 cfs from Calero Reservoir (as measured at stream gage 5013) would extend flow of Calero Creek 3.5 miles to the Alamitos Percolation Pond Diversion.

Winter base flow releases would depend on the storage volume of Calero Reservoir and where that storage volume falls within the range of the graduated rule curves. For example, if the storage volume were above the highest winter Reservoir Reoperation Rule Curve (shown in dark blue in Figure 4-10), 11 cfs would be released. As storage decreases, or if storage never reaches the 10 cfs winter base rule curve, the release would be reduced.

4.4.3.3 Pulse Flow (Attraction Flow)

Pulse flows of 50 cfs would be released from Calero Reservoir between February 1 and April 30 when both of the following criteria are met:

- Reservoir storage exceeds the winter Reservoir Reoperation Rule Curve for the date.
- Stream and weather conditions are such that it is safe to release 50 cfs for a 5-day period.

The reservoir would be operated in this manner until there have been two periods of 5 consecutive days of flows greater than 50 cfs measured at stream gage 5013 during that water year. Each spill event in excess of 50 cfs for 5 consecutive days between February 1 and April 30 would also be considered a pulse flow event.

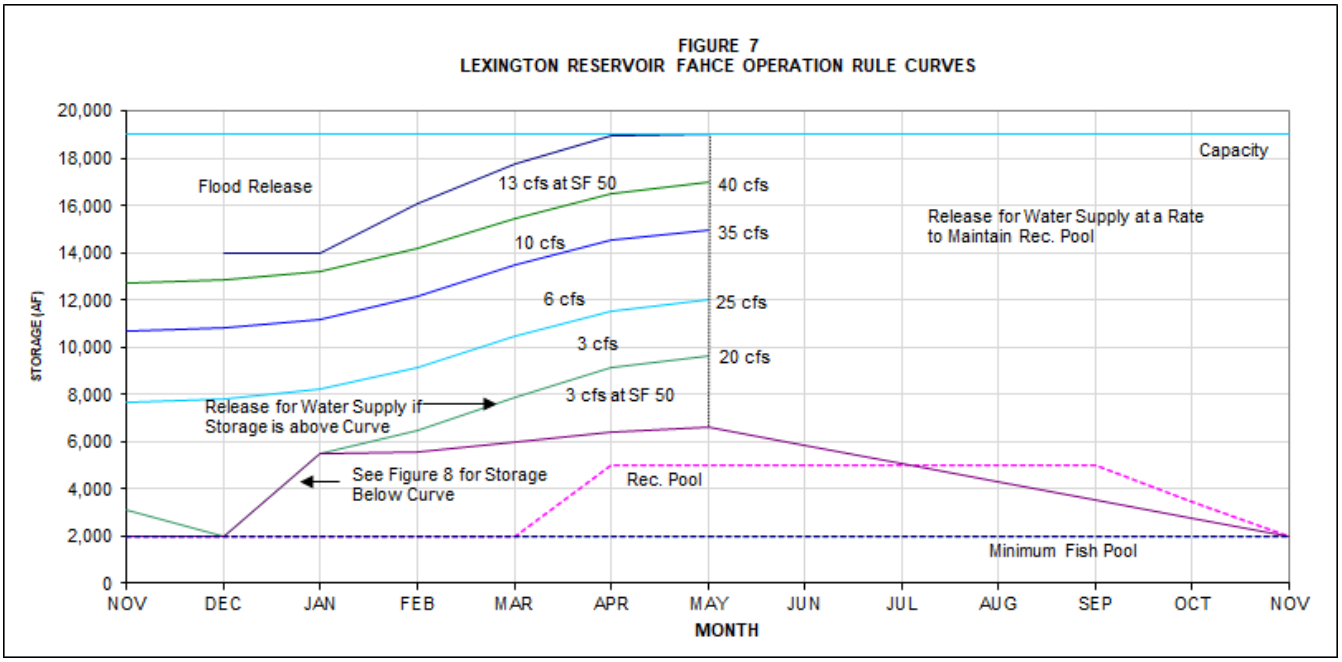
4.4.3.4 Summer Rearing Flows and Temperature Management (Summer Releases)

Calero Creek has no CWMZ; therefore, no additional temperature management releases are included in the proposed rule curves for summer at Calero Reservoir. Releases would be made to meet a 400-AF minimum emergency storage volume on December 1 at the reservoir.

4.4.4 Lexington Reservoir

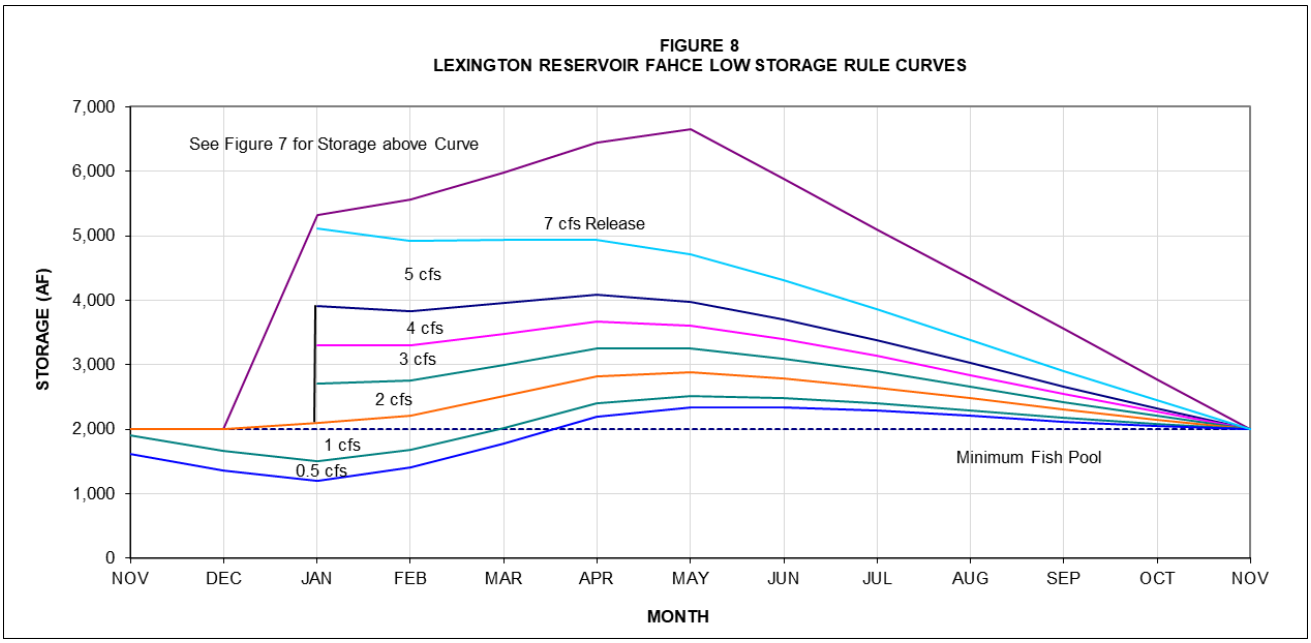
On Los Gatos Creek, Lexington Reservoir (at Lenihan Dam) has a capacity of 19,044 AF and a minimum fish pool of 2,000 AF. Under the FHRP, Lenihan Dam would be operated in accordance with the Reservoir Reoperation Rule Curves and low-storage rule curves (Figure 4-11 and Figure 4-12). The reservoir release rate for a particular date would depend on the reservoir storage volume.

Figure 4-11. Lexington Reservoir Reoperation Rule Curves



The cross-referenced Figure 8 for storage below curve is Figure 4-12 below.

Figure 4-12. Lexington Reservoir Low-storage Rule Curves



4.4.4.1 Present Reservoir Operations

Current operations provide local water for instream and offstream recharge. During the winter diversion period, water is captured to maximize storage on April 30. Summer releases are made to meet groundwater recharge needs and to provide storage volume for the next diversion period.

4.4.4.2 Winter Base Flow

From November 1 to April 30, Valley Water would provide winter base flows to Los Gatos Creek by releasing water from Lexington Reservoir, Vasona Reservoir, imported supplies, or a combination of all three in accordance with the Reservoir Reoperation Rule Curves (Figure 4-11 and Figure 4-12). A minimum flow of 2.5 cfs would be provided in Los Gatos Creek at the Camden Drop Structure, measured at stream gage 5050 downstream near I-280.

Winter base flows would be based on the storage volume of Lexington Reservoir. For example, if the storage volume were above the highest winter Reservoir Reoperation Rule Curve (shown in dark blue in Figure 4-11), 13 cfs would be released. As storage decreases, or if storage never reaches the 13 cfs winter base rule curve, the release from the reservoir would be reduced.

4.4.4.3 Pulse Flow

Pulse flows would not be part of the operating parameters for Los Gatos Creek because pulse flows would be attenuated before reaching the Camden Drop Structure Diversion, which is the upstream extent of salmonid habitat in Los Gatos Creek (Figure 4-7).

4.4.4.4 Summer Rearing Flows and Temperature Management

Los Gatos Creek has no CWMZ; therefore, no additional temperature management releases are included in the proposed rule curves for summer at Lexington Reservoir. Releases would be made to meet a 2,000 AF minimum fish pool storage volume on December 1 at the reservoir.

4.5 Fish Passage Barriers

Seven existing fish passage barriers in the Guadalupe River watershed were identified by Settlement Agreement § 6.6.2 as potential remediation sites. Two locations, both on the Guadalupe River mainstem, are Valley Water-owned facilities, whereas the other five, two on the mainstem and three on tributaries, are owned by others.

Assessing the performance of fish passage facilities post-remediation will vary depending on the facility. However, measurable objectives to assess performance would relate to the flow conditions required to provide passage of adult and juvenile steelhead, and the frequency with which those flow conditions are met. Methods to monitor flow conditions in each of the Three Creeks and measurable objectives to assess success are discussed in Chapter 6 *Adaptive Management Program*.

4.5.1 Phase 1 Priority Barriers Owned by Valley Water

The two fish passage barriers owned by Valley Water are the Alamitos Percolation Pond and the St. John Street Gage Weir (Figure 4-13). Both locations are along the Guadalupe River mainstem, and remediation has been completed by Valley Water for both. as part of the Early Implementation measures

4.5.1.1 Alamitos Percolation Pond

The purpose of the Alamitos Percolation Pond project, completed in 2001, was to construct and operate both a fish ladder over the drop structure and a water intake with a fish screen to convey water from Guadalupe River into Alamitos Ponds (Figure 4-7). Previously, the un-laddered, 13-foot-tall Alamitos Percolation Pond had presented a barrier to safe passage for salmonid adults upstream and juveniles downstream.

4.5.1.2 St. John Street Gage

The St. John Street Gage was a USGS gage weir upstream of West St. John Street Bridge that acted as a fish barrier and needed to be removed. A design report developed by USACE proposed replacing the existing USGS gage weir with a series of stepped grade-control structures that would provide fish passage and channel stability, be visually pleasing, and meet resource agency criteria for environmental concerns. The weir was removed, and both of the stepped grade-control structures were constructed in 2004.

A list of actions taken at these locations is included in Appendix B *Documentation of Completed Settlement Agreement Obligations*. Maintenance of facilities remaining at this location, as well as monitoring and future adaptive management, is included in the scope of this FHRP.

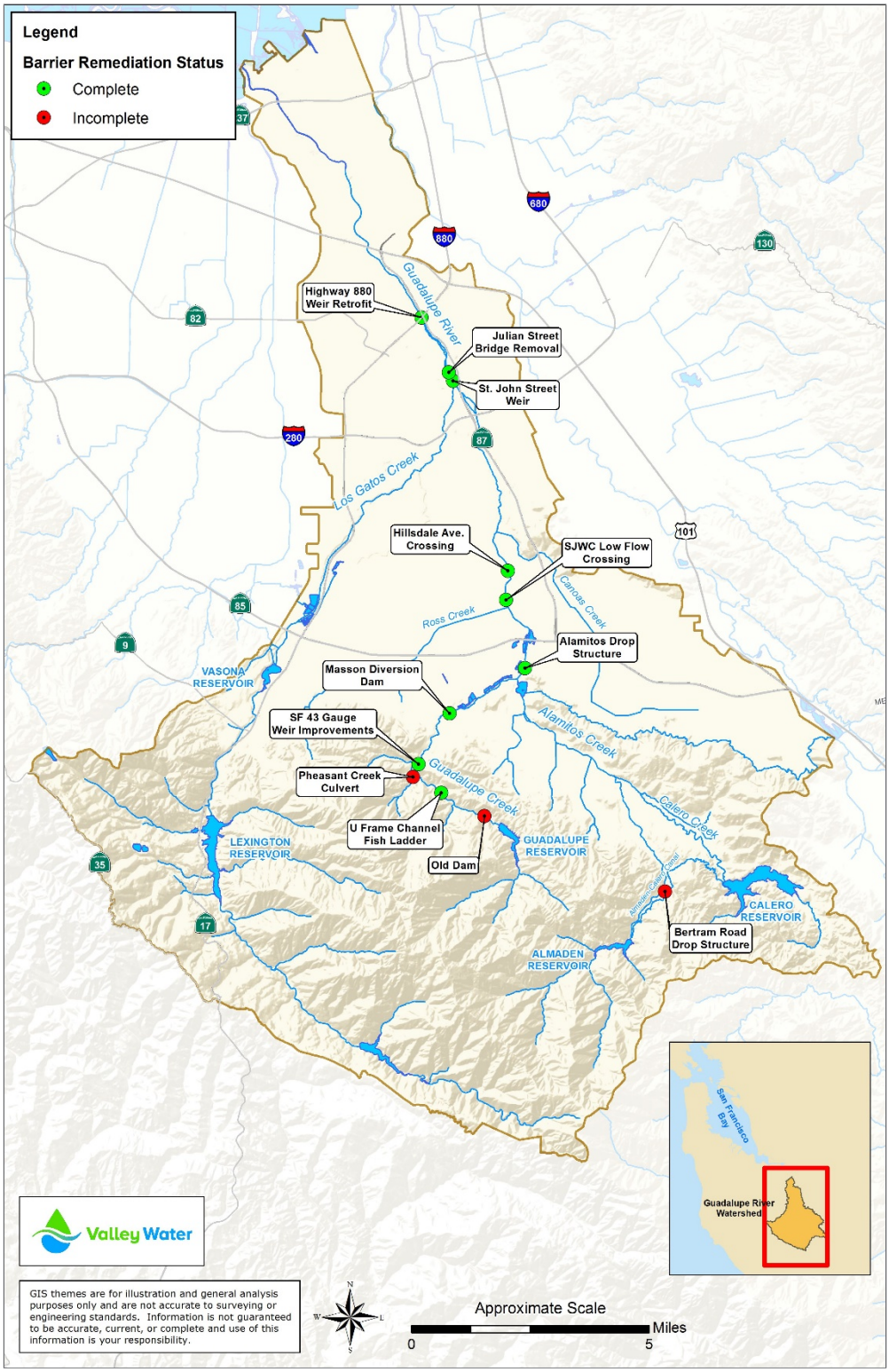
4.5.2 Phase 1 Priority Barriers Owned by Others

Two additional mainstem fish barriers were identified by the TAC as priority remediation sites: the Hillsdale Avenue Bridge, owned by the City of San Jose, and the San Jose Water Control Low-flow Crossing, owned by the San Jose Water Company (Figure 4-13). These locations were successfully remediated in 2000 and 1998, respectively. as part of the Early Implementation measures.

4.5.2.1 Hillsdale Avenue Bridge

At the Hillsdale Avenue Bridge, steel piles and associated bridge construction falsework were removed and replaced with a gravity-flow bypass system consisting of two gravel coffer dams and two 24-inch-diameter pipes.

Figure 4-13. Guadalupe River Watershed Fish Passage Barrier Remediations as Defined in 2003 Settlement Agreement



4.5.2.2 San Jose Water Control Low-flow Crossing

The San Jose Water Control Low-flow Crossing was a deteriorated instream crossing of Guadalupe River between Branham Lane and Hillsdale Avenue, with an approximately 5-foot drop that was completely removed and replaced by three boulder weirs with an approximately 1-foot drop at each weir. A list of the actions taken at these locations is included in Appendix B *Documentation of Completed Settlement Agreement Obligations*.

Valley Water identified three additional non-Valley Water fish passage barriers on tributaries that feed Guadalupe River (Figure 4-13) for remediation coordination (Water Valley 2018). None of these facilities have been remediated; all are still in various stages of planning and within the scope of this FHRP. Given that these facilities are not Valley Water-owned, Valley Water's responsibility is to facilitate remediation and provide funding for up to 50% of the project cost. All of these barrier remediations are being, and will continue to be, coordinated with NMFS and CDFW during planning and design. The three barriers are the following:

- Pheasant Creek Culvert, currently owned by Mid-Peninsula Open Space District;
- Old Dam on Guadalupe Creek, privately owned; and
- Bertram Road Drop Structure on Alamitos Creek, privately owned.

4.5.3 Other Fish Passage Barrier Removals – Early Implementation Projects

Per Initialing Party guidance provided in Settlement Agreement § 6.2.4.2, Valley Water has completed efforts to improve fish passage at five additional locations in the Guadalupe River watershed: two at the Guadalupe River mainstem and three at Guadalupe Creek. These were not specifically identified as Phase 1 Priority Barriers in the Settlement Agreement.

The other fish passage improvement actions that have been completed since the Settlement Agreement are as follows:

1. Guadalupe River: Highway 880 Weir Retrofit, completed in 2014. The weir was retrofitted to improve fish passage conditions. Grouted boulders were added downstream to elevate the grade and decrease the jump height and velocities downstream of the weir to facilitate easier passage for fish.
2. Guadalupe River: Removal of Old Julian Street Bridge, completed in 2005. The Old Julian Street Bridge and all its associated infrastructure was removed, creating better conditions for fish migration upstream and downstream of the old bridge location.
3. Guadalupe Creek: U-frame Channel Fish Ladder, completed in 2008. The project provided upstream passage to adult steelhead and Chinook salmon through a highly modified stretch of Guadalupe Creek below Guadalupe Reservoir. At several points along the U-frame structure, fish passage had been impeded by up to 4-foot jump heights due to existing structure conditions. The project provided for adequate upstream and downstream fish passage by limiting jump height to less than 0.5 foot.
4. Guadalupe Creek: Weir Improvements at gage 5043, completed in 2004. The project improved upstream fish passage at stream gage 5043 adjacent to Hicks Road. The gaging weir had a 1.5-foot drop and was considered an impediment to fish passage. The project modified the weir to lower the jump height and improve upstream passage. An additional weir downstream was also modified to increase surface elevation in downstream pool, further reducing the height of the drop.
5. Guadalupe Creek: Fish Ladder at Masson Diversion Dam, completed in 2000. The project provided adequate passage for salmonid adults upstream and juveniles downstream past the existing 5.5-foot concrete dam pursuant to the April 1997 Memorandum of Understanding

(MOU# 0228-97) between Valley Water and CDFW. Valley Water constructed a concrete fish ladder and steel fish screen to provide safe passage for both upstream and downstream fish migrants.

4.6 Spawning and Rearing Habitat Improvements

Valley Water has identified measures to improve spawning and rearing habitat in the Guadalupe River watershed. These actions include augmenting spawning gravel and enhancing juvenile rearing habitat.

4.6.1 Spawning Gravel Augmentation

The FAHCE stated that a lack of suitable spawning habitat could be a limiting factor for steelhead and fall-run Chinook salmon in the Guadalupe River watershed. A gravel placement program as required by Settlement Agreement § 6.2.4.3.1 will be implemented to enhance existing spawning habitat, such as in existing areas that could be suitable for spawning but where gravel conditions are inadequate for successful spawning and incubation. Valley Water will develop annual work plans for spawning gravel augmentation for AMT review, the first of which will be prepared following approval of this FHRP. The process and schedule for spawning gravel augmentation are included in Chapter 6 *Adaptive Management Program*.

Preliminary areas that Valley Water expects to be investigated for augmenting spawning substrate in the Guadalupe River watershed include reaches of Guadalupe River and its tributaries that are relatively frequently accessible by spawning steelhead and Chinook salmon, and reaches where hydraulic and water temperature conditions are often suitable during spawning seasons. This approach is consistent with NMFS (2016), which states that restoration actions in the Guadalupe River watershed should address habitat constraints in stream reaches that have a high potential to benefit steelhead recovery. NMFS (2016) further recommends that initial habitat enhancement efforts in the Guadalupe River watershed occur in the upstream-most accessible reaches, management zones, and CWMZs.

Given the typical hydrologic conditions and the frequency of dry hydrologic years in the watershed, Valley Water expects it would be most appropriate to place new spawning gravel directly into the wetted channel to provide immediate spawning habitat.

Near-census habitat typing surveys conducted in the Guadalupe River watershed in summer 1999 (Entrix 2000) indicated a lack of suitable spawning habitat. For example, approximately 1% or less of the wetted area surveyed in Guadalupe River, Los Gatos Creek, Alamitos Creek, and Calero Creek was potential spawning habitat. Relatively higher percentages of the wetted channel surveyed in the lower reaches (Entrix Reaches GUC1 and GUC2) of Guadalupe Creek were potential spawning habitat. Based on modeled hydraulics and water temperatures and on habitat subsampling conducted by Valley Water (2016), average monthly spawning habitat suitability indices are generally low (that is, a habitat suitability index of approximately 0.2 or less) throughout most of the Guadalupe River watershed but are of low to moderate suitability (habitat suitability indices of 0.2 to 0.4) in riffle habitat units in POI Reach GUAD5 of Guadalupe River. Subsampling habitat surveys conducted by Valley Water (2016) indicate that spawning gravels in at least some habitat types in each geomorphic reach in Alamitos, Guadalupe, and Los Gatos Creeks exhibited high embeddedness values (that is, more than 25%). In contrast, spawning gravel in POI Reaches GUAD5 through GUAD7 generally exhibited relatively low amounts of embeddedness (that is, less than 25%) in most habitat types. No suitably sized spawning substrate for steelhead or Chinook salmon was identified in 2016 in the surveyed reach of Calero Creek.

Based on the overall limited amount of suitably sized spawning gravel throughout most of the Guadalupe River watershed, as well as relatively high spawning substrate embeddedness in some areas, augmenting suitably sized clean spawning gravel in Guadalupe River and its tributaries could immediately increase the amount of suitable spawning habitat and could allow suitable spawning habitat landforms to form naturally downstream.

Valley Water produced a study identifying specific restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. Site selection and project design would follow the methodologies and techniques of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010).

Chapter 6 *Adaptive Management Program* proposes studies that will be implemented to identify the location(s) for augmenting gravel, as well as the substrate size composition and quantity of augmented gravel, before any gravel-augmentation activities are implemented. During Phase 1, the AMT will identify the specific locations and set the performance standard(s) to which the site(s) will be held following implementation of gravel augmentation measure(s). Any changes to the initial plan will be implemented through the AMP (see Chapter 6 *Adaptive Management Program*).

4.6.2 Juvenile Rearing Habitat Enhancements

As stated by the FAHCE, structural habitat for juvenile rearing could be limiting the abundance of steelhead and Chinook salmon throughout the Guadalupe River watershed. As required by Settlement Agreement § 6.2.4.3.2, a gravel placement program will be implemented in Phase 1 of the FHRP to enhance juvenile rearing habitat, including the appropriate placement of large organic debris; channel modifications, including berms; and riparian canopy enhancement. Valley Water will develop annual work plans for juvenile rearing habitat enhancement for AMT review, the first of which will be prepared following approval of this FHRP. The process and schedule for juvenile rearing habitat enhancements are included in Chapter 6 *Adaptive Management Program*.

For the Guadalupe River watershed, Valley Water expects it would be most favorable to integrate the juvenile rearing enhancement measures with the spawning gravel augmentation program, such that high-quality spawning habitat is provided adjacent to suitable initial fry and juvenile rearing habitat. This integration could reduce the potential for steelhead and Chinook salmon fry to be forced downstream to less-suitable habitats during winter (Wheaton et al. 2004) and would ideally provide juvenile rearing habitat during low-flow conditions through summer and fall. This strategy would help address previously identified potential limiting factors for steelhead and Chinook salmon, including habitat availability during summer for juvenile steelhead and a general lack of suitable complex structural habitat for juveniles of both species (Entrix 2000; NMFS 2016).

Because simulated water temperatures are generally suitable through most of summer in these reaches during most years, enhancing juvenile rearing habitat in these areas might be the most effective way to benefit both Chinook salmon and steelhead, along with improving juvenile rearing habitat near suitable spawning areas. Habitat data collected in summer and fall 2016 indicate that the amount of instream cover in some habitat units sampled in these reaches was relatively low, and that the complexity of the cover in most habitat units sampled was generally moderate according to the criteria identified in Flosi et al. (2010). For example, instream cover observed in Guadalupe River, Alamitos Creek, Guadalupe Creek, and Calero Creek consisted primarily of terrestrial and aquatic vegetation or boulders rather than small and large woody debris (POI Reach ALAM2 in Alamitos Creek; Figure 4-1 and Figure 4-2). NMFS (2016) suggested that instream shelter and cover ratings are low in much of the Guadalupe River watershed downstream of the reservoirs due largely to an absence of large woody debris and limited channel complexity.

Improving structural habitat conditions in the upper reaches of Guadalupe River and in reaches of Los Gatos Creek, Guadalupe Creek, and Alamitos Creek would likely improve overall habitat suitability for steelhead and Chinook salmon fry and juvenile rearing. Enhancements to increase channel complexity and function would be consistent with addressing potential limiting factors for juvenile steelhead and Chinook salmon. In addition, some of these habitat features could provide additional benefits by increasing the suitability of these reaches for spawning and adult holding.

Based on the guidance provided by Flosi et al. (2010), the enhancement measures that might be most suitable for Guadalupe River include bank-placed boulders, plunge weirs, and log cover. Enhancements that might be most suitable for Guadalupe Creek include bank-placed boulders, opposing wing deflectors, plunge weirs, and log cover. Enhancements that might be most suitable for Alamitos Creek include bank-placed boulders, plunge weirs, boulder clusters, single and opposing wing deflectors, and log cover. If enhancement measures were implemented in Calero Creek, the measures that might be most suitable include bank-placed boulders and log cover. NMFS (2016) also recommended that restoration efforts in degraded reaches of the Guadalupe River watershed incorporate instream wood and/or boulder structures to improve habitat complexity and shelter availability.

Valley Water produced a study identifying specific enhancement restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. As described in Chapter 6 *Adaptive Management Program*, specific rearing enhancement measures would be implemented after additional studies are conducted, and after actions are screened and ranked through the AMP.

4.7 Watershed-specific Improvements

Settlement Agreement § 6.6.2.1.3.3 identified one other watershed-specific improvement for the Guadalupe River watershed. The action consists of Valley Water completing an *Alamitos Creek Facilities Plan*, including two parts, as discussed in the following sections. Preparation of the *Alamitos Creek Facilities Plan* is included in this FHRP.

4.7.1 Almaden Dam

4.7.1.1 Plan for Almaden Dam – FHRP Measure

A plan for Almaden Dam and Reservoir will evaluate alternatives to:

- provide unimpeded fish passage, both upstream and downstream, at the existing dam and reservoir;
- eliminate increases to water temperature in the reservoir; and
- eliminate or minimize the methylation of mercury in the sediments behind the dam.

If a feasible alternative is identified, the plan will recommend action, including design and construction schedules.

4.7.1.2 Almaden Lake Improvement Project – Early Implementation Project

The plan for Almaden Lake, now termed the Almaden Lake Improvement Project, is proposed to restore the creek channel section within Almaden Lake Park and eliminate the current condition whereby Alamitos Creek flows through the lake to improve the health of native fish habitat and eliminate the current deposition of naturally occurring mercury-laden sediment into the lake. The project would further improve water quality and minimize impacts to existing recreational features in

the park. A separate project-specific CEQA analysis has been conducted, evaluating Valley Water's proposal to separate Alamitos Creek from Almaden Lake by constructing a new levee in the north-south direction through the lake, restoring upstream and downstream connectivity, recontouring the lake bottom, expanding the existing island, constructing a new island, revegetating the area with native vegetation, and developing a flow-through water system to circulate water through the lake (Valley Water 2021c). The proposed project, approved by the Valley Water Board of Directors in May 2021, would improve temperature conditions and remove habitat favored by aquatic predators. The new levee would become the lake's new west bank boundary and isolate the lake to the east side of the park. The new levee would also serve as the restored creek's east embankment. Restoring the creek channel section means Alamitos Creek can flow directly into Guadalupe River as it once did prior to the rocky quarry (Valley Water 2021c).

4.7.2 Geomorphic Functions Enhancement Pilot Projects

The geomorphic functions of a stream are dynamic and interrelated physical, chemical, and biological processes that create and maintain the character of a stream and its associated riparian habitat. The geomorphology of high-functioning streams support habitat diversity, maintain channel equilibrium, and provide a sediment source and storage for riparian and aquatic habitat succession.

Phase 1 includes preparation of a geomorphic functions study for the Guadalupe River as defined in Settlement Agreement § 6.2.4.4 to include:

- identification of stream reaches where geomorphic functions necessary for channel maintenance or formation are impaired;
- evaluation of the feasibility of restoring geomorphic functions in those stream reaches identified as impaired; and
- development and implementation of pilot projects based on the feasibility analysis noted above, with a goal of a minimum of 2,000 linear feet of channel in the Guadalupe River watershed.

Geomorphic function restoration projects may occur along any major tributaries within the Guadalupe River watershed. Project sites would be selected through a separate project based on data collected as part of monitoring. Site selection and project design would follow the methodologies and techniques of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010).

Restoration of geomorphic function projects may include, but not be limited to, modification of channel dimensions and shape, installation of rock or log weirs to improve habitat complexity or passage, and installation of root wads or large woody debris to provide cover and velocity refuge. Specific methods and techniques for placement and anchoring would be made during project design.

Chapter 5 – Coyote Creek Watershed (Phase 1 Measures)

This chapter provides management objectives for Coyote Creek watershed as well as discussion of watershed-specific Phase 1 measures designed to achieve the management objectives. Implementation status is included for each measure, as well as a brief overview of future Valley Water responsibilities. Please note that the Phase 1 measures described here will be further refined in the ADSRP EIR project description, and their impacts will be evaluated in that EIR prior to their final approval and implementation.

5.1 Watershed-specific Management Objectives

Section 2.2 *FHRP Management Objectives* describes the primary objectives of the FAHCE program for the Three Creeks. Specific to Coyote Creek, the management objective of this FHRP is to restore and maintain a healthy steelhead and Chinook salmon population in the Coyote Creek watershed by providing:

- approximately 5 miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek;
- adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat, and for outmigration of juveniles; and
- extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP.

This chapter is focused on Phase 1 measures that have not been completed as early implementation actions. Phases 2 through 4 are discussed in Chapter 6 *Adaptive Management Program*. This chapter discusses those tools and methods that Valley Water is proposing for monitoring outcomes of implemented measures, including those already implemented and those discussed in the following section.

5.2 Coyote Creek Watershed Characteristics and Fisheries Habitat Conditions[1]

This section describes the characteristics of the Coyote Creek watershed and provides a brief overview of the watershed's historical and current conditions as they relate to fish habitat.

5.2.1 Watershed Characteristics

The 206,000-acre Coyote Creek watershed is the largest watershed in the County. It originates in the Diablo Range and flows 42 miles to the Bay. Coyote Creek collects flows from multiple tributaries, including Upper and Lower Penitencia, Fisher, Berryessa, Norwood, Miguleita, and Upper and Lower Silver Creeks. Coyote Creek also supplies local runoff to two Valley Water-operated reservoirs: Anderson and Coyote. The headwaters of the Coyote Creek watershed are on the east side of the County in the Diablo Range (Figure 5-1).

Local rainfall runoff from the upper watershed is collected in Coyote Reservoir during its water right's diversion period and is released downstream throughout the year. Releases from Coyote Reservoir releases combine with other local drainages, including Otis Canyon, Packwood, and Las Animas Creeks before converging in Anderson Reservoir.

In addition to collecting flows from the main stem of Coyote Creek, Anderson Reservoir collects runoff from Las Animas Creek to the north of the reservoir and Packwood Creek to the east. Furthermore, imported water from the CVP can be diverted to Anderson Reservoir via the Anderson Force Main. Local and imported water is subsequently released from Anderson Reservoir and can then be sent either downstream to Coyote Creek or to Valley Water's raw water distribution system (to supply water treatment plants),

[1] This section may be updated in the ADSRP EIR with more recent information.

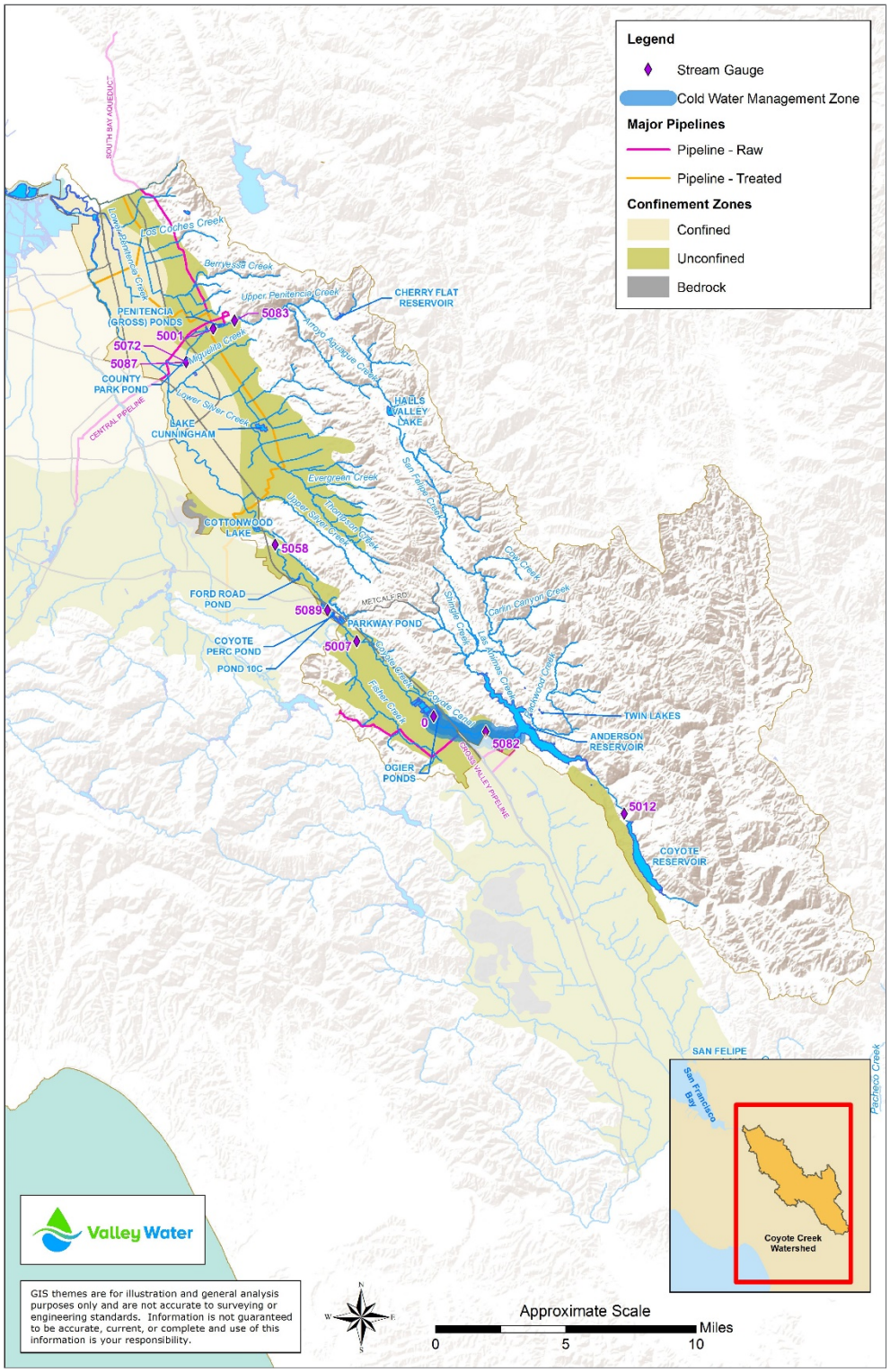
and/or diverted to recharge the groundwater basins via percolation in Coyote Percolation Pond, Madrone Channel, Main Avenue Ponds, and San Pedro Ponds. Releases from Anderson Dam can also flow directly to Coyote Creek via the Coyote Discharge Line approximately 0.25 mile downstream of Anderson Dam, providing instream flow and/or recharge. The Coyote Discharge Line is owned by the U.S. Bureau of Reclamation and is operated by Valley Water.

Releases to Coyote Creek also serve to recharge the multiple groundwater basins on the valley floor through in stream percolation. Downstream of the recharge zone before reaching the Bay, Coyote Creek again receives inflows from several tributaries, the largest of which is Upper Penitencia Creek (Figure 5-1). POIs were established by Valley Water to assess habitat conditions in 2016 (see Section 2.4 *Three Creeks Field Surveys*). POI Reaches are identified by type(s) of fish habitat with potential to occur (that is, spawning, rearing, and/or migration corridor) and correspond to the nearest downstream POI (for example, POI Reach COYO7 is the reach that occurs between POI COYO7 and POI COYO8 on Coyote Creek; Figure 5-1).

Prior to 1995, approximately 50 spreader or gravel dams and diversions were operated throughout the County for groundwater recharge. To minimize impacts to the environment, Valley Water ceased using instream spreader dams and diversions that did not have a fish ladder or other suitable passage. Since 1995, only Alamitos, Masson, Coyote, Mabury, and Kirk Dams and Noble and Coyote Canal Diversions remained in operation. The potential benefits of not operating spreader dams include the following:

- improved water quality and temperature;
- improve fish passage;
- improve riparian vegetation health (from lack of construction footprint and impoundment footprint); and
- reduce impact to amphibians from the placement of dams in their habitat and the quick release of water ponded behind the dams.

Figure 5-1. Coyote Creek Watershed Regional Map



5.2.2 Fisheries Habitat Conditions

Before the Coyote and Anderson Reservoirs were built, the downstream reaches of Coyote Creek were braided with intermittent flows and limited riparian vegetation. Based on historical aerial images and survey maps, Grossinger et al. (2006) documented historical characteristics of the Coyote Creek watershed. In contrast to current conditions, under which almost half of the tributaries to Coyote Creek are in engineered channels and flows are managed by Anderson and Coyote Dams, the historical Coyote Creek watershed drainage network was characterized almost entirely by discontinuous stream channels on the valley floor (that is, lacking direct hydraulic connectivity with Coyote Creek), which facilitated groundwater infiltration. The reduction in groundwater infiltration under current conditions is further exacerbated by the conveyance of stormwater from the historical groundwater recharge zones into Coyote Creek through approximately 120 miles of concrete storm drains (Grossinger et al. 2006).

Historical riparian habitat along Coyote Creek has been categorized as open savanna/woodland, riparian scrub, and large unvegetated gravel bars (Grossinger et al. 2006). However, Coyote Creek also supported a perennial reach with relatively dense riparian canopy for several miles downstream of the existing location of Anderson Dam (Grossinger et al. 2006). Most of Coyote Creek was seasonally dry (for example, August through October) under historical conditions from near the confluence with Upper Penitencia Creek upstream to near the Highway 101 crossing (Grossinger et al. 2006). In contrast to most other Santa Clara Valley streams, Coyote Creek historically directly connected to a tidal slough (Grossinger et al. 2006). Since construction of Coyote Dam in 1936, downstream peak flows have been reduced, and flows during summer have increased (Grossinger et al. 2006). This has resulted in changes to the riparian habitat community, including expansion of trees into the active channel, conversion of historical riparian habitats to different types of riparian habitats, and elimination of most of the unvegetated bars and open riparian habitat (Grossinger et al. 2006).

In 2003, EOA, Inc. conducted an assessment of stream ecosystem conditions in the Coyote Creek watershed (see Section 2.4.2 *2003 EOA Assessment of Stream Ecosystem Functions for the Coyote Creek Watershed* for more information on this study). Trends in ecosystem function at Coyote Creek identified by EOA (2003) included increased aquatic habitat and hydrologic functionality in an upstream direction, and increased fish rearing and spawning habitat in an upstream direction starting at Metcalf Road. Floodplain access was reportedly approximately 100% in reaches above Metcalf Pond, but decreased substantially in the more downstream reaches. Historical groundwater subsidence may have reduced channel gradients in some areas of Coyote Creek and exacerbated low-water velocity conditions in the lower reaches (EOA 2003). EOA (2003) also identified the reaches upstream of Metcalf Pond as having the greatest potential for salmonid fish production.

EOA and SFEI (2011; see Section 2.4.4 *2011 EOA and SFEI Ecological Monitoring and Assessment Framework* for more information on this study) evaluated risks to Coyote Creek ecosystem functions, including risks that are both outside of and within Valley Water's control, and conducted an assessment of ecosystem functions in the Coyote Creek watershed based on available information coupled with CRAM surveys. Risks to the Coyote Creek ecosystem identified by EOA and SFEI (2011) as being outside of Valley Water's control included both natural phenomena and anthropogenic effects. Outside of Valley Water's control, natural phenomena affecting Coyote Creek include highly variable climatic conditions, climate change, seismic activity, and plate tectonic movement. Anthropogenic effects include 1) historical land subsidence due to groundwater extraction; 2) grazing by livestock resulting in increased fine sediment input to the upper watershed; 3) urban development impacting riparian areas, introducing toxins to the creek, increasing erosion, and reducing stream water quality; and 4) the proliferation of invasive plant, invertebrate, and fish species altering the ecosystem.

Risks identified by EOA and SFEI (2011) as being within Valley Water's control included 1) potential downstream impacts of impoundments (Anderson and Coyote Reservoirs and Metcalf Pond), such as

downstream incision due to impoundment of sediment, altered hydrographs and water temperatures, and conditions created that are favorable to non-native species; 2) diversion of flows by artificial recharge facilities affecting downstream sediment transport, channel form, and potentially water temperature and water quality; and 3) channel modifications, such as bank revetment, bridge construction, culvert installation and replacement, construction of check dams, and channel alignment, which can reduce the natural roughness of the channel, increase flow velocities and stream power, and facilitate erosion and channel aggradation.

Specific impacts to Coyote Creek associated with the construction and operation of Anderson Dam were reported by EOA and SFEI (2011) as including 1) channel incision downstream due to the trapping of sediments; 2) reduced extent to which fine sediments are flushed out of the system due to homogenized hydrologic patterns and reduced peak flows, resulting in fine sediment being deposited in the lower gradient reaches; 3) reduced riparian complexity due to entrenchment and less frequent floods; and 4) the presence of perennial flows in reaches that historically were dry, contributing to shifts in aquatic and riparian communities.

Based on the CRAM surveys, EOA and SFEI (2011) found that ecological and hydrological functions were heavily impacted by urban development in the lower portion of the Coyote Creek watershed. However, the riparian corridor in the lower portion of the watershed is relatively continuous although relatively narrow (EOA and SFEI 2011). The middle reaches of Coyote Creek, upstream of Berryessa Road to Metcalf Pond, also were found to be particularly affected by anthropogenic activities. They were found to have accumulated fine sediment and organic matter, primarily due to a combination of low stream gradient associated with land subsidence and the aggradation of fine sediment associated with hydrologic alteration and the expansion of the urban drainage network. The buildup of fine sediment in these reaches has reduced the complexity and quality of instream habitat conditions. The fisheries physical habitat data collected by Valley Water (Grossinger et al. 2006) for the Mid-Coyote Creek Flood Control Project and by the SCVURPPP also indicated that habitat in these reaches had become simplified and consists primarily of relatively embedded mid-channel pools (EOA and SFEI 2011). CRAM surveys taken in 2011 also indicated that hydrologic connectivity is relatively low in the middle reaches due to entrenchment (EOA and SFEI 2011).

Available water quality data (that is, dissolved oxygen, sediment chemistry and toxicity, and water temperature) used in the EOA and SFEI 2011 assessment indicated relatively poor water quality conditions, particularly in the middle reaches. Water quality conditions in the middle reaches were linked to the accumulation of sediment and organic matter combined with low flows and low stream gradient. Based on both fisheries and macroinvertebrate indicators (SCVURPPP 2008, as cited in EOA and SFEI 2011), water quality, in addition to simplified physical habitat, is likely negatively impacting biological communities in Coyote Creek, particularly in the middle reaches. Overall, based on the available data, native fish diversity and abundance in Coyote Creek were found to be lowest where physical and chemical conditions were generally degraded, particularly in the middle reaches where entrenched channels, simplified physical habitat conditions, and poor water quality conditions were observed.

Native fish species recently documented in the Coyote Creek watershed include California roach, hitch, rainbow trout/steelhead, prickly sculpin, Sacramento sucker, and threespine stickleback (Valley Water 2020b). Observed non-native species include Inland silverside, mosquitofish, largemouth bass, and bluegill (Valley Water 2020b). Non-native fish species observed by Valley Water between 1995 and 2007 include various species of centrarchids, catfishes, common carp, mosquito fish, striped bass, Chinook salmon, and eulachon (Valley Water 2008). Sacramento splittail, although recorded in historical records, has been identified as likely to be extirpated (Leidy 2007).

Fish species reported to historically occur in non-tidal riverine and brackish-tidal habitat in reaches of Coyote Creek downstream of near Trimble Road included Pacific lamprey, western brook lamprey, thicktail

chub, Sacramento blackfish, hitch, threespine stickleback, Sacramento splittail, Sacramento pikeminnow, Sacramento sucker, prickly sculpin, Sacramento perch, and tule perch (Grossinger et al. 2006). The perennial reach downstream of the existing location of Anderson Dam may have supported species such as Pacific lamprey, thicktail chub, California roach, Sacramento pikeminnow, Sacramento sucker, rainbow trout/steelhead, threespine stickleback, prickly sculpin, Sacramento perch, and tule perch (Grossinger et al. 2006). Thicktailed chub are extinct, with the last recorded specimen being caught in the Sacramento River near Rio Vista in 1957 (Moyle 2002). It is possible that Sacramento splittail were already declining when Snyder recorded their presence in 1904. The last recorded occurrence for Sacramento perch in Coyote Creek was 1959 (Valley Water 2015).

As described in Section 2.4 *Three Creeks Field Surveys* and referenced above, during 1999 and 2016, Valley Water conducted habitat typing surveys in the Three Creeks for the FAHCE program (Figure 2-1 *1999 Entrix and 2016 Valley Water Field Survey Study Areas* and Figure 5-2). Downstream of Entrix Reach COC2, the tidally influenced most-downstream reach, was not surveyed. Entrix (2000) found that pools were the most frequent habitat type (based on length) in all Coyote Creek watershed reaches surveyed. The lower and middle reaches of Coyote Creek, including Entrix Reaches COC2 through COC6 (that is, POI Reaches COYO1 through COYO4; Figure 5-2) in particular, were dominated by pool habitat units (ranging from approximately 78% to 91% of total habitat units by reach). Flat-water habitat units were the second most frequent habitat type identified in all surveyed reaches. Riffle habitat units represented less than 3% of habitat units in Entrix Reaches COC2 through COC6 (that is, downstream of POI Reach COYO4), but represented 10% to 12% of habitat units in Entrix Reaches COC7 and COC8 (that is, reaches above POI COYO6; Figure 5-2).

Based on the Entrix (2000) surveys, the area of each habitat type by reach estimated to be suitable for juvenile salmonids generally increased in an upstream direction, with relatively little suitable rearing habitat identified in Entrix Reaches COC2 through COC4. Entrix Reach COC7 was found to contain the majority of suitable rearing habitat identified in the creek. The primary limiting habitat factors identified for juvenile rearing in Entrix Reaches COC4 through COC8 were lack of food transport, shallow depth, and lack of instream cover (Entrix 2000). Approximately 1% of the total wetted area surveyed in Coyote Creek was determined to provide potential spawning habitat (Entrix 2000). Most of the potential spawning area was located in the most upstream reaches (that is, Entrix Reaches COC6 through COC8).

Habitat typing and suitability data similar to the data collected during the 1999 surveys were also collected during summer 2006 between Montague Expressway and I-280 (Entrix 2006), which corresponds to the majority of Entrix Reach COC2 and the entirety of Reaches COC3 and COC4 in Coyote Creek. The 2006 habitat survey results indicate that habitat types were primarily composed of pools (approximately 84% of the length of the entire 2006 study reach), with lesser amounts of runs (approximately 15% of the study reach length) and riffles (approximately 1% of the study reach length). Based on an approximation of the locations of the habitat units surveyed in 1999, similar habitat type proportions were identified in the 1999 and 2006 surveys, with the exception of a reported reduction in the length of riffle habitat, and an increase in the reported length of flat-water habitat in 2006 (see *Habitat Sampling Workplan*; Valley Water 2016). The reported difference in proportion of riffle and flat-water habitat units could be due to various factors, including differences in flow conditions observed during the two surveys, differences in survey methodologies, geomorphic changes to the channel, and/or spatial inconsistencies between the 1999 and 2006 habitat data. Measured flows during the 1999 habitat surveys in Entrix Reaches COC2 through COC4 during October ranged from 2 to 21 cfs, while measured flows in the same reaches during the 2006 habitat survey in July and August ranged from 4 to 18 cfs.

During September and October 2016, Valley Water conducted additional habitat surveys in Coyote Creek, which included habitat typing according to Flosi et al. (1998) and collection of additional habitat data for the purpose of estimating indices of habitat suitability and availability by lifestage. Downstream of Anderson

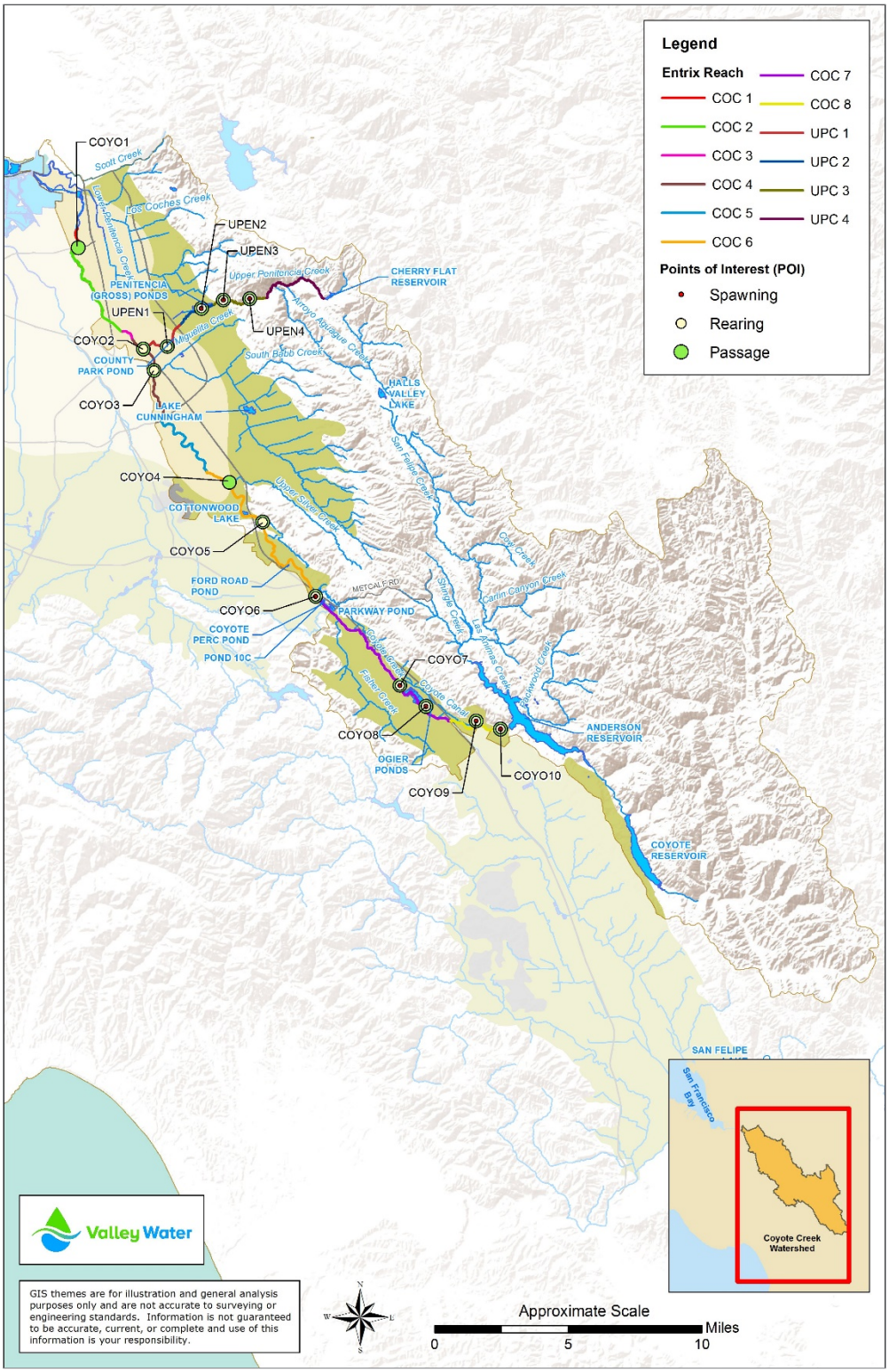
Reservoir, Coyote Creek was delineated by Valley Water in 2017 into 10 POI Reaches for the 2016 surveys (Figure 5-1 and Figure 5-2). Valley Water surveyed approximately 45% of Entrix Reach COC4, 5% of both Entrix Reaches COC5 and COC6, 9% of Entrix Reach COC7, and 11% of Entrix Reach COC8. Consistent with the Entrix (2000) surveys, the tidally influenced reach below Entrix Reach COC2 (that is, downstream of POI Reach COY01) was not surveyed by Valley Water in 2016.

As discussed in Section 2.4.5 *2016 Valley Water Field Surveys* and detailed in Appendix O *Use of Habitat Data in Support of CEQA Analysis for FAHCE Fish Habitat Restoration Plan* located in the EIR, Valley Water's 2016 habitat data (Valley Water 2017) were generally used to represent baseline habitat conditions for FAHCE hydrologic modeling in most geomorphic reaches in the Coyote Creek watershed. Three exceptions to this where Entrix 2000 data were used for modeling the system, are the following:

1. Entrix Reach COC3 (that is, most of POI Reach COYO1) was not sampled in 2016 because it was identified as relevant to fish passage only (that is, limited amounts of fish spawning and rearing habitat). Additionally, at the time of the 2016 sampling, access to these reaches presented a threat to staff health and safety.
2. Sections of Upper Penitencia Creek (Entrix Reaches UPC1 and UPC4) had limited wetted area to sample in 2016, the end of a 5-year extreme drought cycle.
3. A small tidal portion of Coyote Creek (COC1) was not sampled in either effort and was excluded from the modeling as it was considered inconsequential for the analysis.

In comparing the two datasets, the proportion of riffle, flat-water, and pool habitat units by reach identified by Valley Water in 2016 were similar to, and not statistically significantly different from, the proportions reported by Entrix (2000) for Entrix Reaches COC4, COC6, and COC8 (Valley Water 2017; Figure 5-2). The habitat type proportions identified by Valley Water in 2016 for Entrix Reaches COC5 and COC7 were statistically significantly different from the habitat type proportions identified by Entrix (2000), primarily due to an increase in proportion of flat-water habitat units and a reduction in the proportion of pool habitat units identified by Valley Water in 2016 relative to Entrix (2000; Valley Water 2017).

Figure 5-2. Coyote Creek Channel Reaches (Entrix 2000 and Valley Water 2016)



5.3 Existing Watershed Diversions and Proposed Changes to Water Rights

5.3.1 Diversions

The following sections describe three Valley Water diversion sites located in the Coyote Creek watershed: one on Coyote Creek and two on Upper Penitencia Creek, which is a major tributary to Coyote Creek (Figure 5-3). The Noble Diversion is operated under a SWRCB Water Rights permit; the Coyote Diversion is licensed by a SWRCB WRO and has an LSAA imposed by CDFW; and the Mabury Diversion, used only for diversion of imported water (no local flow), is regulated by a CDFW-LSAA.

5.3.1.1 Noble Avenue Dam Diversion

The Noble Diversion on Upper Penitencia Creek was originally permitted to divert 3,500 AFY of water between November 1 and June 1 into the Penitencia Percolation Pond complex for irrigation and domestic uses (under SWRCB Permit 6565). However, the maximum amount of water ever diverted during the permit period was 2,230 AFY in the 1950–1951 diversion period. A fish ladder and fish screen were installed at this location in 1999. More recently, the Noble Diversion has not been routinely used to divert local flows because of the lack of productivity and the flashy nature of the stream, and because the South Bay Aqueduct in Tracy was completed in 1964, allowing SWP-imported water to be used for recharge.

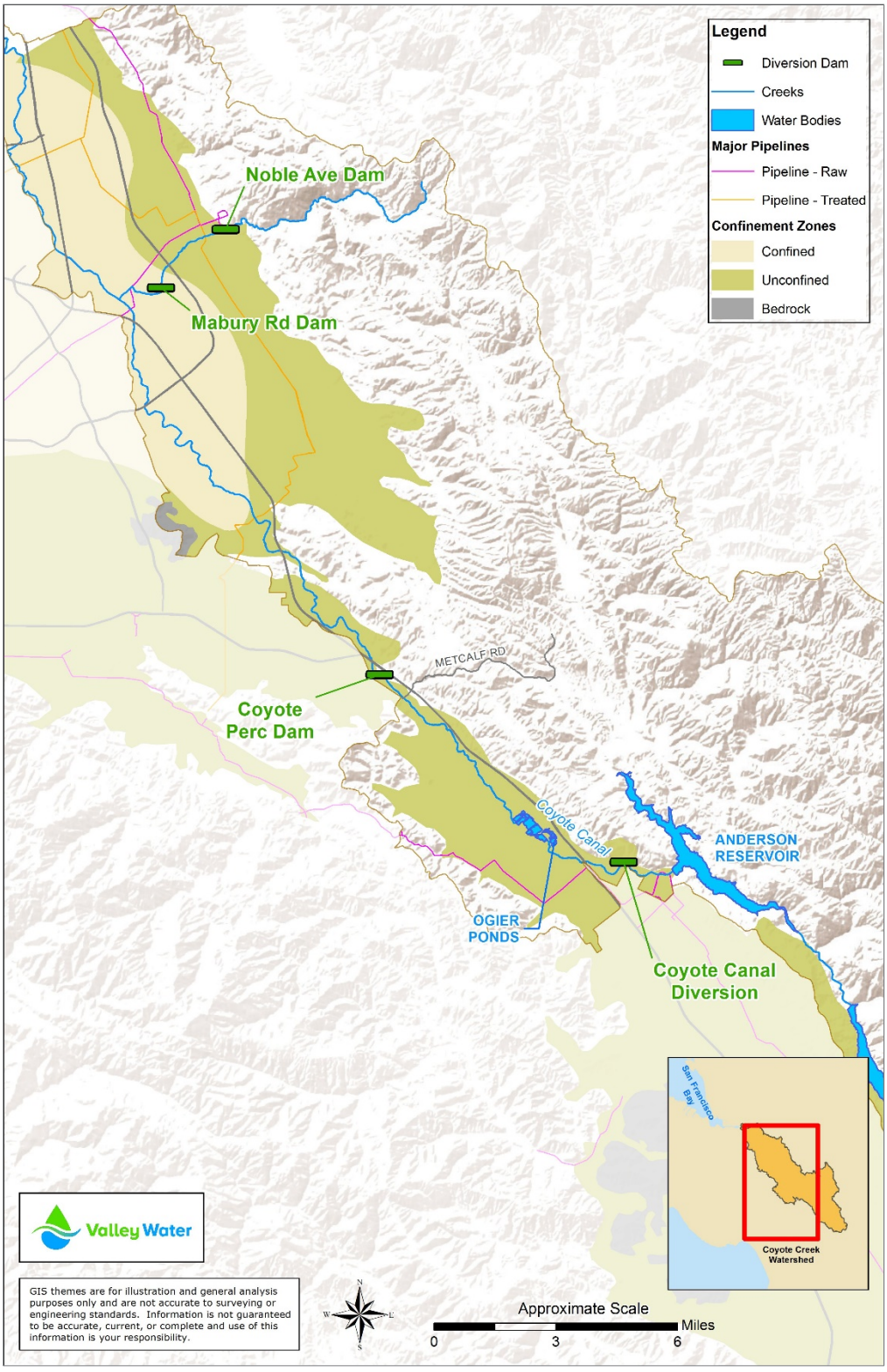
5.3.1.2 Coyote Percolation Dam Diversion

The Coyote Percolation Dam is approximately 0.75 mile downstream of Metcalf Road on Coyote Creek and diverts flow to form the Coyote Percolation Pond. The 10-foot-high flashboard dam also includes a fish ladder. The permitted diversion is 5,000 AFY from April 1 to December 15 for domestic water supply and irrigation purpose of uses under SWRCB Permit 2210; operation is also conducted under a CDFW-LSAA (Notification 1600-2009-0411-R3). The Coyote Percolation Dam also rediverts water released from two upstream water rights licenses: Anderson and Coyote Reservoirs.

5.3.1.3 Mabury Road Dam Diversion

The Mabury Diversion facilities, consisting of a diversion dam and step weirs, are located on Upper Penitencia Creek downstream of the Noble Diversion. Valley Water does not have a water right for diversion at the Mabury Diversion; however, Valley Water diverts up to 2,300 AFY of imported water to the Mabury and Overfelt groundwater recharge ponds via this facility. Valley Water does not own or operate any upstream reservoirs that would provide water to this facility. The facility is permitted to operate only during low-flow periods and bypasses local instream flows that support fish and wildlife habitat. Current operation at the facility consists of allowing natural dryback of the channel to occur before introducing imported water into the channel for diversion at the Mabury Diversion. The only water diverted at this facility is that which is introduced to the stream via the South Bay Aqueduct. Operation of the dam and diversion r is conducted under a CDFW-LSAA (Notification 1600-2009-0413-R3).

Figure 5-3. Coyote Creek Watershed Diversions



5.3.2 Proposed Changes to Valley Water's Water Rights

Five water rights change petitions are proposed for the Coyote Creek watershed (Table 5-1).

Table 5-1. Proposed Water Rights Change Petition for Coyote Creek Watershed

Permit Number	Facility/Water Source	Priority Date	Current Appropriation (AFY)	Diversion Period	Existing Purpose of Use	Change Proposed in Petition
5061	Coyote Reservoir/ Coyote Creek	12/09/1931	24,560	10/01 to 07/01	Domestic, Irrigation, Minor Industrial and Incidental Recreation	Change Purpose of Use to Municipal, Minor Industrial, Fish and Wildlife Preservation and Enhancement, and Incidental Recreation
5062	Coyote Percolation Pond/Coyote Creek	07/10/1935	5,000	04/01 to 12/15	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement
8494	Anderson Reservoir/ Coyote Creek	04/04/1949	71,100	12/01 to 05/01	Domestic, Irrigation, Industrial, Recreational and Incidental Power	Change Purpose of Use to Municipal, Industrial, Fish and Wildlife Preservation and Enhancement, Incidental Power, and Incidental Recreation
14704	Anderson Reservoir/ Coyote Creek	01/21/1963	20,180	10/01 to 07/01	Domestic, Industrial, Recreational and Incidental Power	Change Purpose of Use to Municipal, Industrial, Fish and Wildlife Preservation and Enhancement, Incidental Power, and Incidental Recreation
6565	Penitencia Percolation Ponds at Noble Ave./Upper Penitencia Creek	03/20/1945	3,500	11/01 to 06/01	Domestic and Irrigation	Change Purpose of Use to Municipal, and Fish and Wildlife Preservation and Enhancement; discontinue use of original diversion point; add additional diversion points to establish instream recharge zone; dedicate remaining water under license under Water Code § 1707

AFY = acre-feet per year; Domestic = Domestic Water Supply

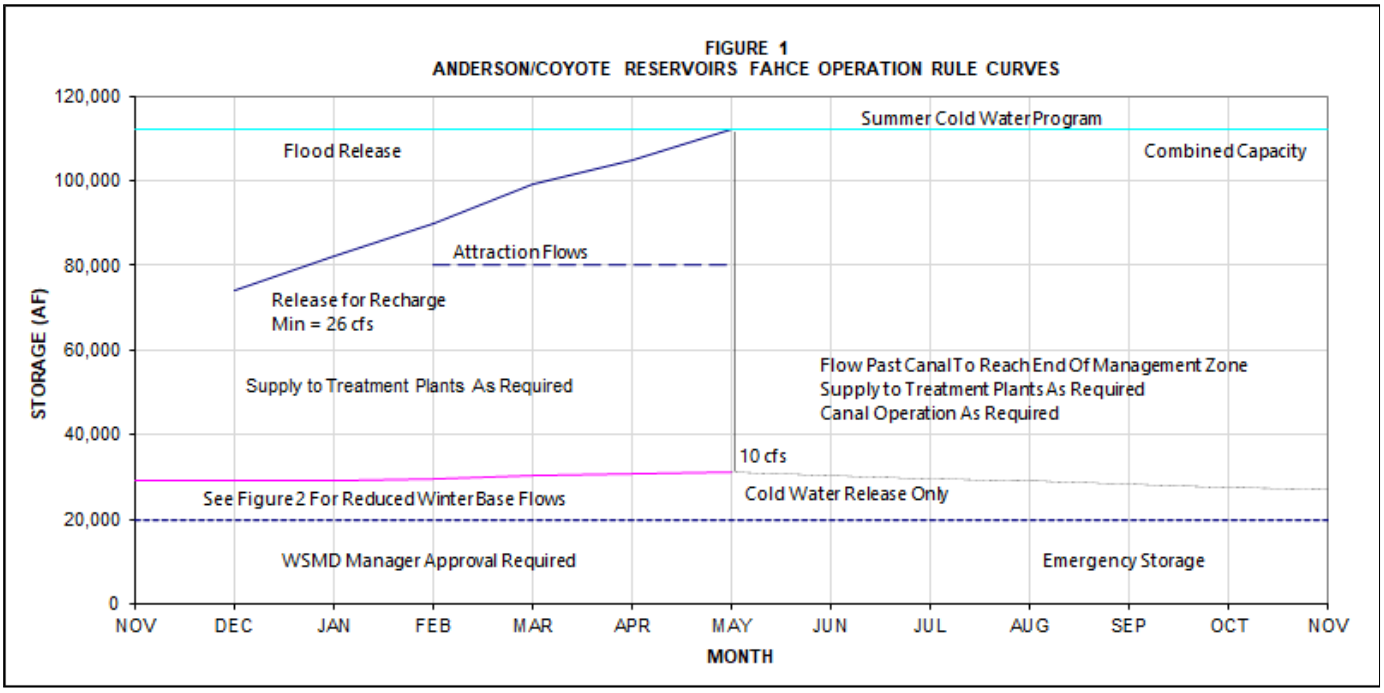
Specific to the Penitencia Creek Diversion (Noble Avenue Ponds), and based on historical maximum diversion amounts (see Section 5.3.1 *Diversions*), Valley Water is proposing that 1,730 AFY be licensed and dedicated under California Water Code § 1707 to support fish and wildlife habitat and that 500 AFY (for a total diversion of 2,230 AFY) be licensed for municipal use via natural instream percolation (rather than a physical diversion).

5.4 Flow Measures and Reservoir Reoperation Rule Curves

Reservoir Reoperation Rule Curves for the Coyote Creek watershed, to be implemented after construction of the ADSRP, are provided in Figure 5-4. Reservoir storage ranges from a minimum combined emergency storage of 20,000 AF to a maximum combined capacity of 113,597 AF (Coyote Reservoir with 23,224 AF and Anderson Reservoir with 90,373 AF). The Reservoir Reoperation Rule Curves address reservoir storage and releases given allocation requirements for treatment plants and minimum flows to meet temperature goals set for the CWMZ downstream. The CWMZ for Coyote Creek extends from the outlet of Anderson Dam to POI COY08 (Figure 5-1). For dry years, low-storage rule curves have been calculated, as shown in Figure 5-5.

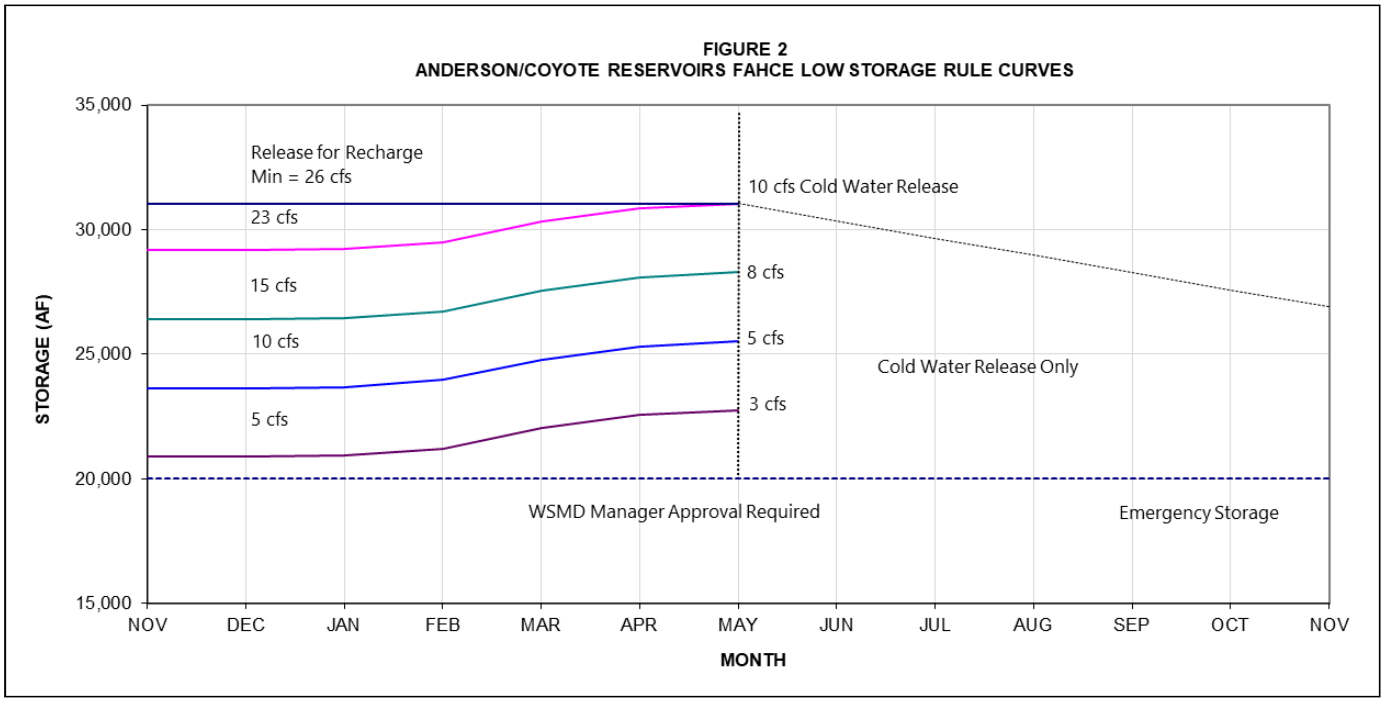
Under this FHRP, Coyote and Anderson Dams would be operated in tandem in accordance with the Reservoir Reoperation Rule Curves depicted in Figure 5-4 and Figure 5-5. Imported water temporarily stored in Anderson Reservoir would not be included in volume calculations for determining the appropriate Reservoir Reoperations Rule Curve to use. The reservoir release rate for a particular date depends on local reservoir storage volume on that date. Flow measures would not be implemented until after Anderson Dam Seismic Retrofit construction is complete.

Figure 5-4. Reoperation Rule Curves for Anderson and Coyote Reservoirs



The cross-referenced Figure 2 is Figure 5-5 below.

Figure 5-5. Low-storage Rule Curves for Anderson and Coyote Reservoirs



5.4.1 Historic and Present Reservoir Operations

For both Anderson and Coyote Reservoirs, during the winter diversion period, water is captured in excess of release to maximize storage quantities on April 30. Rediversion occurs at Coyote Percolation Pond.

Coyote Reservoir captures runoff and provides local water to Anderson Reservoir. Summer releases from Coyote Reservoir are made to meet water supply needs downstream and to provide maximum storage capacity for the next diversion period by transferring captured waters to Anderson Reservoir.

Anderson Reservoir provides a local water supply for instream and offstream groundwater recharge and contributes to the County-wide distribution system. Each year, water stored as of May 1 is released during summer to meet water supply needs.

DSOD seismic-related restrictions were first placed on Anderson Reservoir in 2009 based on elevations. Since then, the restricted capacity has been capped at 58% of full storage (unrestricted capacity is 89,278 AF). The Anderson Dam Seismic Retrofit program (see Section 1.3.1 *Dam Safety Operations Restrictions*) was initiated in 2011 through the *Valley Water Capital Improvement Plan* to design and construct a seismic retrofit of the dam; construction at Anderson Dam is scheduled to begin in 2024. The same restrictions have been placed on Coyote Reservoir, which was capped in 1992 at 53% of capacity (unrestricted capacity is 22,541 AF). This restricts total capacity for the two reservoirs combined at 63,609 AF (dark blue line in Figure 5-4; unrestricted capacity for two reservoirs combined is 111,819 AF).

Currently, the Anderson Reservoir has been drawn down[2] to 3% of its capacity as ordered by FERC. It will remain drawn down until after the ADSRP construction has been completed.

[2] Reservoir elevation could be increased to address winter storm events.

5.4.2 Winter Base Flow

Winter base flows are intended to support steelhead spawning and egg incubation in Coyote Creek. Therefore, between November 1 and April 30, Valley Water would provide winter base flows to Coyote Creek downstream of Anderson Reservoir by releasing water from Anderson and Coyote Reservoirs, or the Santa Clara Conduit, or a combination of the three, in accordance with the Reservoir Reoperations Rule Curves provided above in Figure 5-4. The Santa Clara Conduit conveys CVP-imported water. Any use of imported water to meet an operational commitment in lieu of local supply from Anderson Reservoir would result in reclassification of an equivalent volume of local water in Anderson Reservoir from local water to imported water for the purpose of applying the Reservoir Reoperation Rule Curves.

Winter base flow releases would depend on the combined storage volume of Coyote and Anderson Reservoirs. Combined storage must exceed approximately 24,000 AF to initiate small baseflow releases of 5 cfs. Baseflow releases increase as storage in the reservoirs increases to a maximum baseflow release of approximately 23 cfs at a combined storage volume of approximately 28,000 AF. Release rates might be increased whenever reservoir storage volume allows reservoir operation at the next-highest rule curve for at least 5 consecutive days. Releases to the raw water distribution system would also be allowed when the reservoir storage volume is above the highest winter rule curve. As storage decreases, or if storage never reaches the 26 cfs winter base rule curve, the release from the reservoir(s) would be reduced. Releases will be monitored and recorded below Anderson Dam at streamflow station 5082, Coyote Creek at Madrone, located approximately 1.2 miles downstream of Anderson Dam.

5.4.3 Pulse Flow

Pulse flow releases (identified as Attraction Flows on Figure 5-4) would be made between February 1 and April 30 to improve passage conditions for upstream and downstream migration of salmonids. The combined storage volume of Anderson and Coyote Reservoirs must exceed the pulse flow rule curve of 80,000 AF before pulse flows would be released. When this threshold is reached, and when safety conditions allow, 50 cfs would be released from Anderson Reservoir through the reservoir outlet, the Anderson Hydroelectric Facility, or both.

The reservoir would be operated in this manner until there have been two periods of 5 consecutive days of flows greater than 50 cfs, as measured at stream gage 5082, in the current water year. Flood flow releases and spill events in excess of 50 cfs for 5 consecutive days between February 1 and April 30 would also be considered pulse flow events.

5.4.4 Summer Rearing Flows and Temperature Management

Summer releases from Anderson Reservoir (outlet or hydroelectric facility) would be made from May 1 to October 31 to maintain a water temperature not to exceed 18°C throughout as much of the CWMZ as available cold-water storage would allow. The official CWMZ, as defined in the Settlement Agreement, is the reach of Coyote Creek from the outlet of Anderson Dam to Coyote Creek Golf Drive.

If imported water from the Santa Clara Conduit is 14°C or less, and the combined reservoir storage is adequate for summer releases, releases from the Santa Clara Conduit to Coyote Creek might be substituted for releases from Anderson Reservoir with the restrictions defined in Section 5.4.2 *Winter Base Flow*. Storage in excess of the requirements shown in Figure 5-4 might be released to Coyote Creek.

For the purpose of determining summer release rates, the cold-water reservoir storage (14°C or less) would be determined each year by conducting a temperature survey of Anderson Reservoir (and, if required, Coyote Reservoir) between April 15 and 30. The cold-water volume would be released at a constant rate so that water temperatures do not exceed a daily average of 18°C throughout the CWMZ and a minimum average daily flow of 2.5 cfs at POI COY08 (Figure 5-1). The winter base rule curves have

been designed to maintain cold-water storage to support these summer releases. Monthly reservoir temperature profiles might be conducted from June through October to adjust releases to correspond to changes in hypolimnetic volume.

5.5 Fish Passage Barriers

This section describes measures to address priority barriers to fish passage in Coyote Creek. Two locations, both on Upper Penitencia Creek, are Valley Water-owned facilities; three others, two on Coyote Creek and one on Upper Penitencia Creek, are owned by others. The following sections describe these facilities and provide a status of each measure's implementation.

Assessing the performance of fish passage facilities post-remediation will vary depending on the facility. However, measurable objectives to assess performance would relate to the flow conditions required to provide passage of adult and juvenile steelhead, and the frequency with which those flow conditions are met. Methods to monitor flow conditions in each of the Three Creeks and measurable objectives to assess success are discussed in Chapter 6 *Adaptive Management Program*.

5.5.1 Phase 1 Priority Barriers Owned by Valley Water

5.5.1.1 Penitencia Recharge Pond Diversion/Noble Fish Ladder – Early Implementation Project

The Penitencia Recharge Pond Diversion and Fish Ladder has been out of service since 2000. Although identified in Figure 5-6 as complete, to meet the FHRP objectives, the remaining existing fish ladder and intake structures could be improved to allow unimpeded fish passage. In 1999, the existing diversion facility was modified to include a concrete step-pool fish ladder to improve fish passage. The fish screen was also improved at the facility to exclude fish from entering the diversion. Valley Water will consider modification of these structures in the future through adaptive management. The habitat immediately surrounding the diversion site could be rehabilitated to allow fish passage when natural flows occur in Upper Penitencia Creek. Subsequent maintenance of the site, if necessary, as well as monitoring and any future adaptive management needs would also be included.

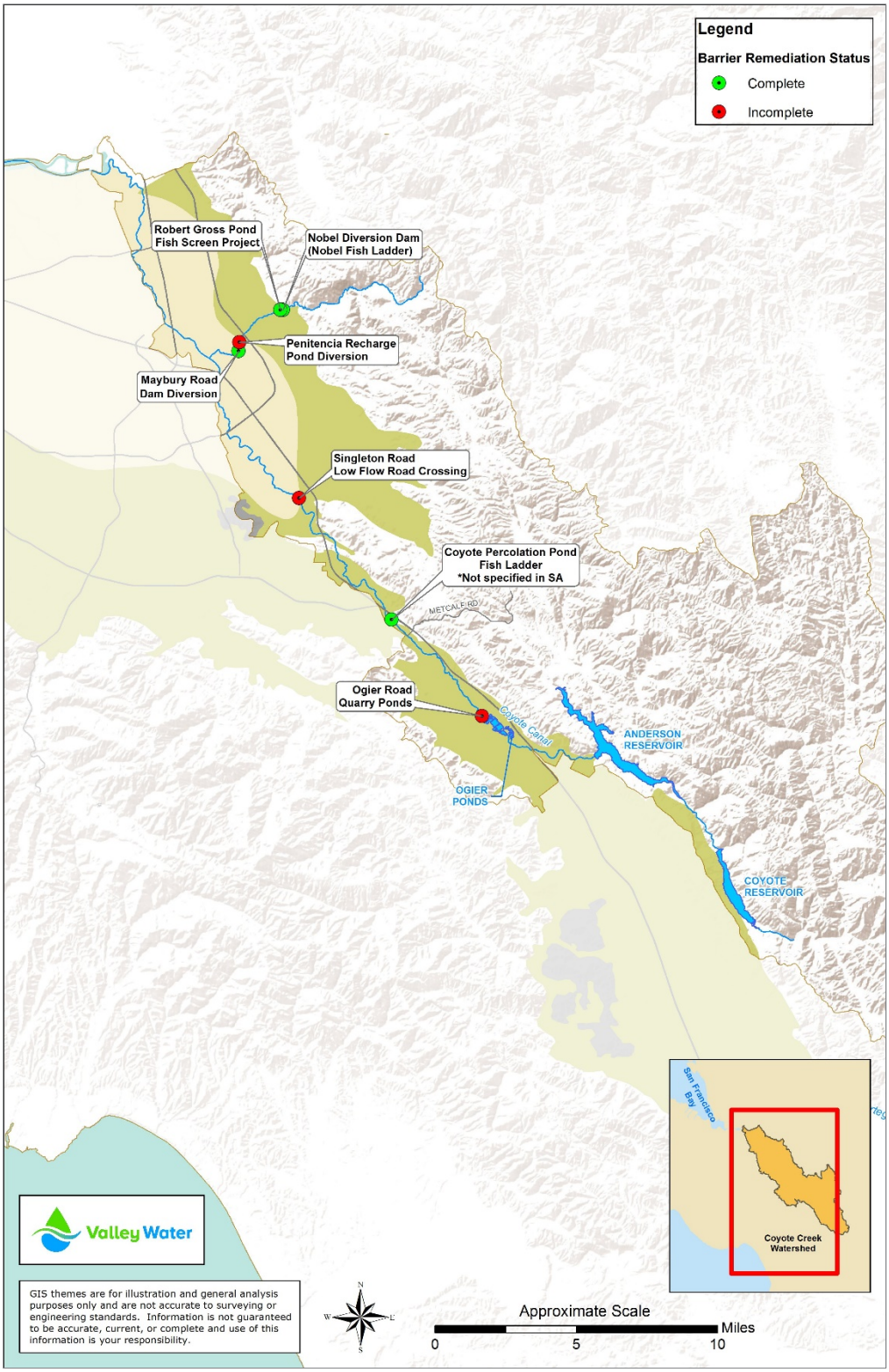
5.5.1.2 Mabury/Overfelt Diversion – Early Implementation Project

In 1998, the following improvements to the Mabury/Overfelt Recharge Pond Diversion were made:

- installed screening to avoid fish impingement across the diversion portal;
- replaced existing flashboard dam panels with improved multi-section panels configured for easier extraction; and
- notched the weir to improve the direction of step flow across the weir steps and to control the jump height required and the attraction flow point for passing fish.

A list of the actions taken at this location is included in Appendix B *Documentation of Completed Settlement Agreement Obligations*. Additional work at the pond could be required through adaptive management. Maintenance of facilities remaining at this location, as well as future monitoring and adaptive management requirements, are also included in this FHRP.

Figure 5-6. Coyote Creek Watershed Fish Passage Barrier Remediations as Defined in 2003 Settlement Agreement



5.5.2 Phase 1 Priority Barriers Owned by Others

Given that these facilities are not Valley Water-owned, Valley Water's responsibility is to facilitate remediation and provide funding for up to 50% of the project cost. All of these barrier remediations are being coordinated with NMFS and CDFW during planning and design.

As part of this FHRP, Valley Water will continue to work with the County (for Ogier and Robert Gross facilities) and the City of San Jose (for Singleton) to plan, fund, and implement remediation at each location.

5.5.2.1 Unscreened Diversion, Upper Penitencia Creek – FHRP Measure

The unscreened diversion is owned by the Santa Clara County Department of Parks and Recreation; the County is the lead for this barrier-remediation project.

5.5.2.2 Singleton Road Low-flow Crossing – FHRP Measure

The Singleton Road low-flow road crossing (FB24) is one of the highest priority Coyote Creek barriers due to its location farthest downstream. The facility is owned by the City of San Jose, which is the lead for this project. The City of San Jose is in the process of designing and identifying funding sources for construction of a bridge and removal of the instream crossing. Valley Water has set aside funding and developed a design for addressing the passage issue and is currently working with the City to acquire the necessary permits.

5.5.2.3 Ogier Road Quarry Ponds Complex – FHRP Measure

The Ogier Road Quarry Ponds Complex (FB34) is owned by the Santa Clara County Department of Parks and Recreation; the County is the lead for this barrier remediation project. This project is still in the feasibility/planning phase.

5.5.3 Other Fish Passage Barrier Removals – Early Implementation Projects

Per Initialing Parties guidance provided in Settlement Agreement § 6.2.4.2, Valley Water has continued efforts to improve fish passage at other locations in the Coyote Creek watershed that were identified as Phase 1 Priority Barriers.

In the Coyote Creek watershed, a fish ladder was added at the Coyote Percolation Ponds Dam. The Coyote Diversion Dam is located on Coyote Creek, adjacent to Metcalf Park in South San Jose (Figure 5-6). The dam is a steel paneled flashboard dam approximately 110 feet long and 9.5 feet tall that was originally installed in 1934. The site was modified in 1999 to add a fish ladder on the west side of the dam (Figure 5-6). Future maintenance at the site, as well as monitoring and any AMT-identified adaptive management needs, is also included in the scope of this FHRP.

5.6 Spawning and Rearing Habitat Improvements

Valley Water has identified measures to improve spawning and rearing habitat in Coyote Creek as part of Phase 1 of the FHRP. These include augmenting spawning gravel and enhancing juvenile rearing habitat.

5.6.1 Spawning Gravel Augmentation

The FAHCE stated that a lack of suitable spawning habitat could be a limiting factor for steelhead and Chinook salmon in Coyote Creek. A gravel placement program as required by Settlement Agreement § 6.2.4.3.1 will be implemented in Phase 1 of the FHRP to enhance existing spawning habitat, such as in existing areas that could be suitable for spawning but where gravel conditions are inadequate for successful spawning and incubation. Valley Water will develop annual work plans for conducting spawning

gravel augmentation, the first of which will be prepared following approval of this FHRP. The schedule for spawning gravel augmentation is included in Chapter 6 *Adaptive Management Program*.

Areas that Valley Water expects to be investigated for augmenting spawning substrate in Coyote Creek fall within the CWMZ, which encompasses POI Reaches COY08, COY09, and COY10 (Figure 5-1). Further, given typical hydrologic conditions and the frequency of dry hydrologic years in the watershed, Valley Water expects it would be most appropriate to place new spawning gravel directly into the wetted channel to provide for immediate spawning habitat.

Preliminary habitat suitability modeling indicates that steelhead spawning and incubation habitat, which is most consistently available on an annual basis, occurs in POI Reach COY09 (Figure 5-1). Specifically, average annual modeled depths in POI Reach COY09 are of moderate to high suitability for steelhead spawning (that is, habitat suitability indices of 0.5 to 0.9; Section 2.4.5 *2016 Valley Water Field Surveys* provides the indices scale during most years of the 20-year simulation period in riffle and flat-water habitat types. Similarly, average annual modeled velocities for riffle and flat-water habitat types in POI Reach COY09 also are of moderate to high suitability for steelhead spawning (that is, habitat suitability indices of 0.5 to 0.7) during most years of the 20-year simulation period. Habitat suitability modeling also suggests that POI Reach COY09 provides the most consistently available spawning and incubation habitat for Chinook salmon on an annual basis, as indicated by moderate to high average annual depth and velocity suitability indices. Although areas downstream of POI Reach COY09 provide greater amounts of spawning habitat during some days of some years (as indicated by modeled habitat availability indices), accessible and suitable spawning and incubation habitat is most consistently available in POI Reach COY09 for both steelhead and Chinook salmon.

Near-census habitat typing surveys conducted in Coyote Creek in summer 1999 (Entrix 2000) found that the most upstream geomorphic reaches (geomorphic Entrix Reaches COC7 and COC8) were dominated by pool habitats, and that suitable spawning substrate that was not compacted and embedded occurred primarily in pool and run habitat types. Subsampling habitat surveys conducted by Valley Water in 2016 (Valley Water 2016) found that spawning gravel in Entrix Reach COC8 (encompassing POI Reach COY10 and a portion of POI Reach COY09) exhibited low embeddedness values (that is, less than 25%). By contrast, Valley Water (2016) found that spawning gravel in geomorphic Entrix Reach COC7 (encompassing a portion of POI Reach COY09) exhibited relatively higher amounts of embeddedness (that is, greater than 25%).

Based on the overall limited amount of suitably sized spawning gravel in the upper reaches of Coyote Creek, as well as relatively high spawning substrate embeddedness in some areas, augmenting suitably sized clean spawning gravel in the CWMZ could immediately increase the amount of suitable spawning habitat and could allow suitable spawning habitat landforms to form naturally downstream.

Valley Water produced a study identifying specific restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. Site selection and project design would follow the methodologies and techniques of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010).

Chapter 6 *Adaptive Management Program* proposes studies that will be implemented to identify the location(s) for augmenting gravel, as well as the substrate size composition and quantity of augmented gravel, before any gravel-augmentation activities are implemented. During Phase 1, the AMT will identify the specific locations and set the performance standard(s) to which the site(s) will be held following implementation of gravel augmentation measure(s). Any changes to the initial plan will be implemented through the AMP (see Chapter 6 *Adaptive Management Program*).

5.6.2 Juvenile Rearing Habitat Enhancements

As stated by the FAHCE, structural habitat for juvenile rearing could be limiting the abundance of steelhead and Chinook salmon in Coyote Creek. As required by Settlement Agreement § 6.2.4.3.2, a gravel placement program will be implemented in Phase 1 of the FHRP to enhance juvenile rearing habitat, including the appropriate placement of large organic debris; channel modifications, including berms; and riparian canopy enhancement. Valley Water will develop annual work plans for conducting juvenile rearing habitat enhancement.

For Coyote Creek, Valley Water expects it would be most favorable to integrate the juvenile rearing habitat enhancement measures with the spawning gravel augmentation program, such that high-quality spawning habitat is provided adjacent to suitable initial fry and juvenile rearing habitat. This integration could reduce the potential for steelhead and Chinook salmon fry to be forced downstream to less-suitable habitats during winter (Wheaton et al. 2004) and would ideally provide juvenile rearing habitat during low-flow conditions through summer and fall. This strategy would help address previously identified potential limiting factors for steelhead and Chinook salmon in Coyote Creek, including habitat availability during summer for juvenile steelhead and a general lack of suitable complex structural habitat for juveniles of both species (Entrix 2000).

Preliminary habitat suitability modeling indicates that year-round juvenile rearing habitat would be limited downstream of POI Reach COY07, due primarily to shallow simulated water depths and elevated simulated water temperatures. Simulated water temperatures are generally suitable through summer at and upstream of POI Reach COY08. Therefore, enhancing juvenile rearing habitat in POI Reaches COY08, COY09, and/or COY10 in the CWMZ might be most effective in benefiting both Chinook salmon and steelhead juveniles. Habitat data collected by Valley Water during summer and fall 2016 indicate that the amount of instream cover in some habitat units sampled upstream of COY06 was relatively low, and that the complexity of the cover in most habitat units sampled was generally moderate, according to criteria identified in Flosi et al. (2010). Therefore, improving structural habitat conditions in these reaches would likely improve overall habitat suitability for steelhead and Chinook salmon fry and juvenile rearing in Coyote Creek. In addition, based on an assessment of ecosystem functions in Coyote Creek, SCVURPPP (2018) concluded that implementing non-flow habitat enhancement features (that is, geomorphic changes, such as increasing instream cover and complexity) would provide the greatest biological benefit to salmonids in the upstream reaches of Coyote Creek (that is, upstream of Metcalf Road to Anderson Dam).

Enhancements to increase channel complexity and function would be consistent with addressing potential limiting factors for juvenile steelhead and Chinook salmon in Coyote Creek. In addition, some of these habitat features could provide additional benefits by increasing the suitability of these reaches for spawning and adult holding.

The CWMZ of Coyote Creek encompasses all of POI Reaches COY08, COY09, and COY10. Flosi et al. (2010) provide general types of habitat improvement structures that can be considered for use based on the stream channel type under the Rosgen (1996) classification system. Based on the guidance provided by Flosi et al. (2010), the enhancement measure that might be most suitable for POI Reaches COY08, COY09, and COY10 is bank-placed boulders. These reaches might have fair suitability for opposing wing deflectors and poor suitability for plunge weirs, boulder clusters, and single wing deflectors.

SCVURPPP (2018) also recommended the enhancement of channel features by adding large woody debris and other structures to increase channel complexity, create scour pools, and trap sediment in the upper reaches of Coyote Creek. SCVURPPP (2018) further recommended enhancing riparian vegetation in these reaches to increase canopy cover, stabilize banks, reduce water temperatures, and increase the recruitment of large woody debris.

Chapter 5 – Coyote Creek Watershed (Phase 1 Measures)

Valley Water produced a study identifying specific enhancement restoration sites, which Valley Water will use to develop an annual work plan for review by the AMT (Valley Water 2018). Enhancement sites included in each annual work plan would be selected based on data collected as part of the FHRP monitoring. As described in Chapter 6 *Adaptive Management Program*, specific rearing enhancement measures would be implemented after additional studies are conducted, and after actions are screened and ranked through the AMP

5.7 Watershed-specific Improvements

Three additional projects have been identified by Valley Water for the Coyote Creek watershed and are discussed in the following sections.

5.7.1 Coyote Creek Facilities Plan – FHRP Measure

As part of this FHRP, to implement Settlement Agreement § 6.4.2.1.3, Valley Water will draft a *Coyote Creek Facilities Plan* and implement strategies after obtaining any necessary regulatory approvals. The plan will include the following two primary components:

- **Laguna Seca Groundwater Remediation.** The *Coyote Creek Facilities Plan* will evaluate alternatives to manage groundwater inflow from Coyote Creek. The goal is to allow flow releases from Anderson Dam to continue uninterrupted to the vicinity of Metcalf Ponds in a manner that protects other parties' properties and water rights. If a feasible alternative can be identified, Valley Water will recommend action, including design and construction schedules.
- **Metcalf Ponds Stream Corridor Restoration.** The *Coyote Creek Facilities Plan* will evaluate alternatives to isolate percolation ponds, quarry pits, and other structures from the active channel in the vicinity of Metcalf Road to re-establish a free-flowing condition through that vicinity. If a feasible alternative is developed, Valley Water will recommend action, including design and construction schedules.

Depending on the results of the feasibility assessments conducted for the *Coyote Creek Facilities Plan*, specific design and implementation methodologies of associated actions would be evaluated and determined through the AMP. Both components of the *Coyote Creek Facilities Plan* are still in the early stages of development and would be coordinated with NMFS and CDFW. Completion of the *Coyote Creek Facilities Plan*, as well as monitoring and any future adaptive management needs, are included in this FHRP; implementation scheduling is discussed in Chapter 6 *Adaptive Management Program*.

5.7.2 Cherry Flat Reservoir Cooperative Operating Agreement – FHRP Measure

Cherry Flat Reservoir is a City of San Jose facility operated for recreational purposes and located on Upper Penitencia Creek, almost at the top of the catchment (see additional information in Section 1.4.4 *Coyote Creek Watershed*). The watershed above the reservoir is 2.4 square miles of mostly undeveloped rangeland; Valley Water owns approximately 57% of the land within the subbasin around Cherry Flats (ICF 2012). The reservoir was built in the 1930s for irrigation, domestic, and recreational use. This reservoir is not currently managed to support fish flows in Upper Penitencia Creek, although it is managed to maintain minimal flows through Alum Rock Park. As part of this FHRP, to implement Settlement Agreement § 6.4.2.1.4, Valley Water will seek to develop and execute a cooperative agreement with the City of San Jose to develop reservoir release operations guidelines to support steelhead habitat in the stream. In addition to the cooperative agreement with City of San Jose, Valley Water will develop and execute an operations plan for Valley Water facilities on Upper Penitencia Creek. The parameters for this plan would be designed to maintain and enhance stream flow conditions for steelhead downstream of the Noble Diversion.

The intent of the combined operational plans for Cherry Flat Reservoir and Valley Water facilities is twofold:

1. provide suitable flow conditions for adult fish passage, spawning, egg incubation, juvenile rearing, and downstream migration of steelhead in Upper Penitencia Creek; and
2. substantially isolate the creek from the influence of water supply operations so that these operations have minimal effect on salmonid spawning, rearing, and outmigration.

Coordination with the City of San Jose is still in the early stages; therefore, proposed operational plans for both City of San Jose and Valley Water facilities, along with monitoring and future activities for adaptive management, are included in this FHRP.

5.7.3 Trap-and-Truck – FHRP Measure

Settlement Agreement § 6.4.2.1.5 called for Valley Water to undertake a feasibility study of trap-and-truck operations at Anderson Reservoir for the purpose of upstream and downstream migration of steelhead trout. Valley Water is examining the feasibility of trap-and-truck operations at Anderson and Coyote Dams as well as conducting reconnaissance-level assessments of steelhead habitat conditions above these facilities. Depending on the outcomes of the feasibility assessment, additional studies might be conducted to further evaluate the biological benefits, economic costs, and risks and uncertainties with implementing a trap-and-truck program at Anderson and/or Coyote Dams. These facilities' studies and future related actions are included in this FHRP.

5.8 Geomorphic Functions Enhancement Pilot Project

The geomorphic functions of a stream are dynamic and interrelated physical, chemical, and biological processes that create and maintain the character of a stream and its associated riparian habitat. The geomorphology of high-functioning streams support habitat diversity, maintain channel equilibrium, and provide a sediment source and storage for riparian and aquatic habitat succession.

Phase 1 includes preparation of a geomorphic functions study for Coyote Creek as defined in Settlement Agreement § 6.2.4.4 to include:

- identification of stream reaches where geomorphic functions necessary for channel maintenance or formation are impaired;
- evaluation of the feasibility of restoring geomorphic functions in those stream reaches identified as impaired; and
- development and implementation of pilot projects based on the feasibility analysis noted above, with the goal of a minimum of 2,000 linear feet of channel in the Coyote Creek watershed.

Geomorphic function restoration projects may occur along any major tributaries within the Coyote Creek watershed. Project sites would be selected through a separate project based on data collected as part of monitoring. Site selection and project design would follow the methodologies and techniques of the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010).

Restoration of geomorphic function projects may include, but not be limited to, modification of channel dimensions and shape, installation of rock or log weirs to improve habitat complexity or passage, and installation of root wads or large woody debris to provide cover and velocity refuge. Specific methods and techniques for placement and anchoring would be made during project design.

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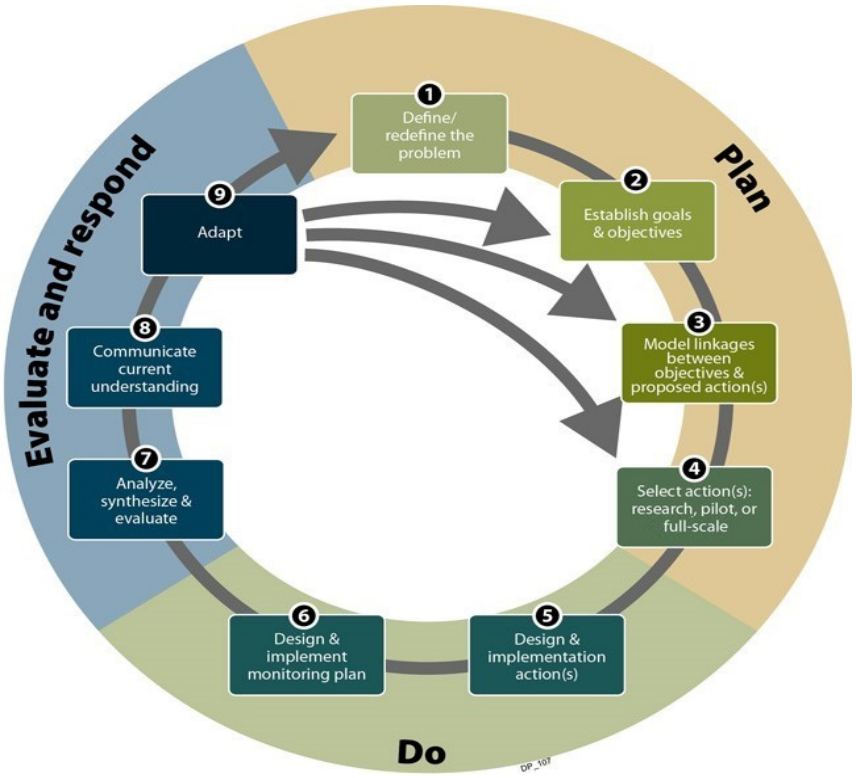
Chapter 6 – Adaptive Management Program

This chapter provides a description of the adaptive management program. It includes discussions of measurable objective, monitoring efforts, and a general schedule for implementation.

6.1 Introduction

Adaptive management is "a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project to achieve specified objectives[.]," as defined in California Water Code § 85052. The CDFW provides an adaptive management framework used by the Ecosystem Restoration Program (ERP)[1]. It encompasses three broad phases: Plan, Do, and Evaluate and Respond, as shown in Figure 6-1. This framework provides a structured process that allows for taking actions under uncertain conditions based on the best available science, closely monitoring and evaluating outcomes, and re-evaluating and adjusting decisions as more information is learned.

Figure 6-1. CDFW's Adaptive Management Framework



[1] The ERP is aimed at improving the quality and availability of aquatic and terrestrial habitat and ecological functions of the Bay-Delta estuary and its tributaries. Principal participants overseeing the program are CDFW, USFWS, and NMFS.

Chapter 6 – Adaptive Management Program

Building on the above, the FAHCE AMP detailed in this chapter is based on the Settlement Agreement (see Appendix A *Settlement Agreement*), the combined experience of state and federal agencies as well as private entities with expertise in adaptive management of habitat restoration efforts for steelhead and Chinook salmon throughout California and elsewhere on the west coast.

As a part of Valley Water's FHRP, this chapter guides how the flow and non-flow measures in the Stevens Creek, Guadalupe River, and Coyote Creek watersheds will be implemented through the FAHCE AMP. It identifies the purpose of the AMP; discusses the uncertainties, key program elements, and measurable objectives; outlines the monitoring programs, decision making process, and development of the FAHCE AMT; and provides an implementation schedule.

6.2 FAHCE Adaptive Management Program

Per Settlement Agreement § 7.3, the purpose of the AMP is:

> to maximize biological and physical benefits material to the Overall Management Objectives through the choice and implementation of the most cost-effective flow and non-flow measures.

Settlement Agreement § 7.1 further states that:

> SCVWD will implement the measures required in paragraphs 6.2 through 6.7, inclusive, in an adaptive manner to effectively mitigate any adverse impacts on the steelhead trout and Chinook salmon fisheries and their habitat, resulting from Valley Water's water supply facilities and operations.

The AMP's purpose supports Settlement Agreement § 6.2.1, which committed Valley Water and other Initialing Parties to "a program of measures intended to restore and maintain fisheries, wildlife, water quality and other beneficial uses of the Three Creeks in good condition." It also supports Settlement Agreement § 6.2.2, which stated that:

> [i]mplementation of the Agreement will restore and maintain healthy steelhead trout and Chinook salmon populations as appropriate to each of the Three Creeks (Coyote Creek, Guadalupe River, and Stevens Creek) by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

Settlement Agreement § 7.3 outlined the key elements of the AMP:

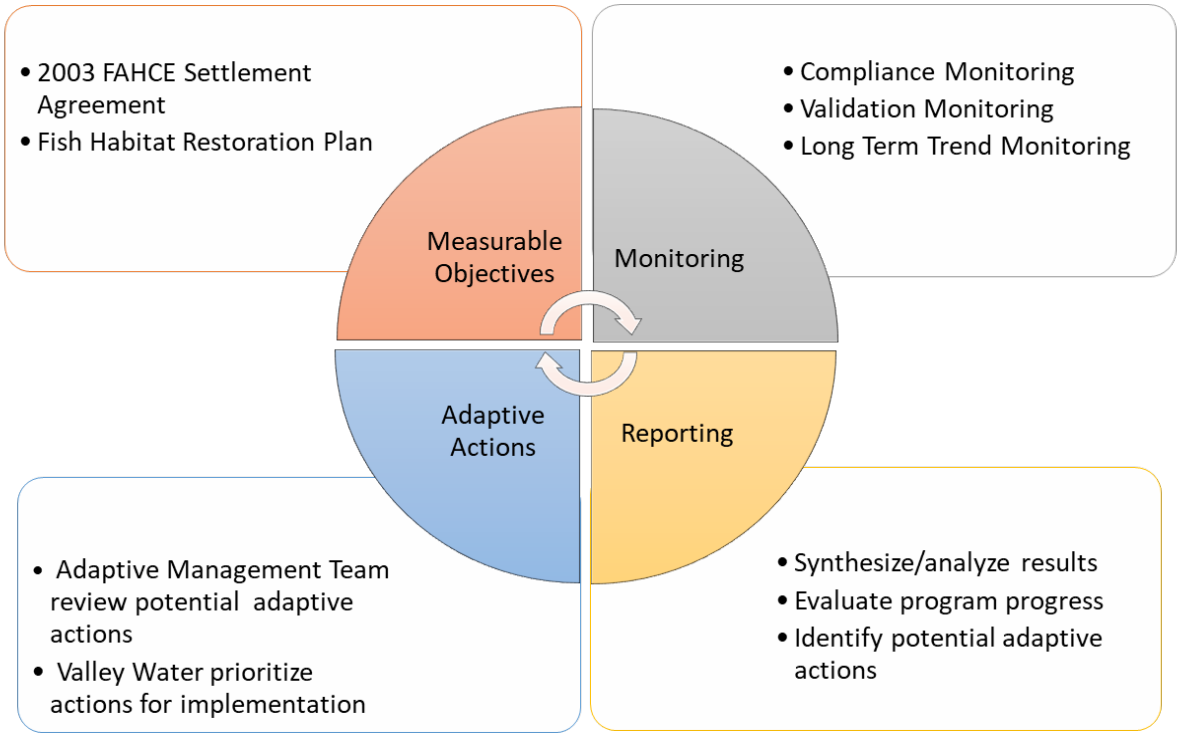
> (A) Measurable objectives consistent with the Phase One, Two, and Three management objectives for the steelhead trout and salmon fisheries and their habitats in the watersheds subject to the Agreement. The measurable objectives will relate to those habitat qualities impacted by SCVWD's facilities and operations, given the Parties' recognition that SCVWD is not responsible under this Agreement for other environmental conditions that may limit the population or distribution of these fisheries. Measurable objectives will be developed for flow measures, including maintenance of suitable water temperatures for summer steelhead rearing, performance of fish passage facilities, and other non-flow measures.
>
> (B) Operation and maintenance procedures and performance standards for individual facilities to contribute to the achievement of such objectives.
>
> (C) Systematic monitoring of fish populations and actual habitat conditions affected by the measures implemented under this Agreement, to determine whether the measures are contributing to achievement of the measurable objectives. During each phase, and on the basis of these monitoring results, the AMT will also evaluate the performance of the entire program in maximizing habitat quality and availability for steelhead and salmon within the

framework of this Agreement. The assessment will also evaluate the performance of the program at each phase in reducing or eliminating limiting factors affecting various life stages of steelhead and salmon directly attributable to SCVWD facilities and operations.

(D) Modification of flow and non-flow measures and other requirements of paragraphs 6.2 through 6.7, as appropriate to remedy any continuing impairment of a beneficial use.

Accordingly, Figure 6-2 illustrates the AMP components, including measurable objectives, monitoring, reporting, and adaptive actions for AMT's decision making (see Section 6.7 of this chapter).

Figure 6-2. Elements of FAHCE Adaptive Management Program



6.3 Challenges and Uncertainties

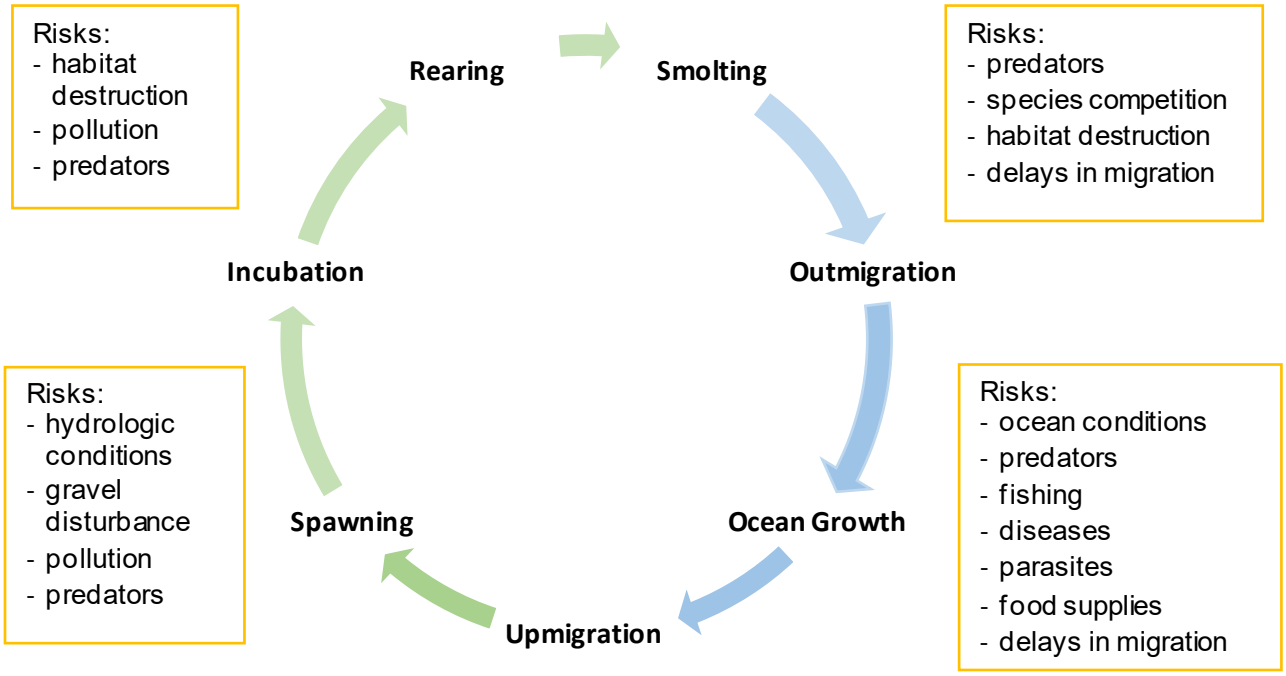
In developing and implementing the AMP, it is important to recognize the uncertainties and challenges affecting fisheries and its habitat. These uncertainties and challenges include risks beyond Valley Water's facilities and operations control, such as climatic and ocean conditions, anthropogenic influences, private and public developmental influences, stream ownership outside Valley Water's control, and imprecise biological responses to restoration measures. There are also acknowledged challenges associated with development of partnerships and other public and private entities funding limitations that could hinder program implementation.

6.3.1 Risks Not Within Valley Water's Operations Control

Climate change, land use, and anthropogenic influences (such as homeless encampments) could potentially affect aquatic habitat conditions. Chinook salmon and steelhead migrate to and from the headwater tributaries to San Francisco Bay and coastal marine waters to complete their complex lifecycles, from egg incubation, rearing, smolting, and juvenile outmigration to grow and mature in the ocean, to adult immigration to the upper watershed for spawning. As these species go through their lifecycles, the survival and population dynamics of salmon and steelhead are affected by risk factors not within Valley Water's

operations control. Figure 6-3 identifies key risks throughout the lifecycle, including seasonal and inter-annual variation in hydrologic conditions; water quality; inter- and intra-specific competition; predation by other fish, birds, and marine mammals; disease; parasites; variation in food supplies; suitability of habitat conditions in the creeks and ocean for juvenile growth and survival; commercial and recreational harvest; and access to suitable freshwater habitat for spawning and migration. Ocean pollution, commercial and sport fishing, and conditions such as El Nino can reduce the survival rates of salmonids during their ocean voyages. Local land use practices and other urban activity can also detrimentally affect aquatic habitats.

Figure 6-3. Risks Affecting Fisheries Populations



6.3.2 Uncertainties Associated with Water Supply Operations

Valley Water owns and operates a complex system of reservoirs, ponds, pump stations, pipelines, and raw water infrastructure to meet the County's water supply needs. Valley Water exercises its water rights for its reservoirs and diversions to meet water demands under a diverse range of hydrologic conditions. Additionally, drinking water treatment plant demands, population growth, variability in groundwater pumping, surface water use directly from pipelines and creeks by customers, non-authorized use, and other regulatory requirements such as seismic restrictions or responding to emergencies (including flooding and drought conditions) can all affect the available water supply. Raw water operations management can also be affected by the hydrologic and operational challenges discussed below.

Seasonal rainfall in the County affects reservoir storage and local releases to creeks throughout the year. Six of the eight Valley Water reservoirs in the northern portion of the County solely rely on storage of local rainfall runoff generated from their corresponding watersheds during diversion periods defined by the individual water rights licenses from the SWRCB. Anderson and Calero Reservoir storage can also be supplemented by imported water supplies or transfers from other local reservoirs when supply is available. Imported water allocations from the CVP and SWP are subject to change when statewide precipitation and snowpack is limited, especially during below-average years. The amount of available storage in local reservoirs also determines the water temperature and amount of cold water available for release to the creeks downstream.

Soil moisture conditions, evapotranspiration rates, groundwater table levels, and other physical changes affecting the creek such as downed trees, large debris, channel erosion, and the extent of the wetted channel in creeks at a given flow rate may vary and introduce additional challenges for balancing beneficial uses.

Aging infrastructure and unplanned outages can pose challenges for managing reservoir releases and monitoring its effectiveness. These challenges include the difficulty in controlling or adjusting large outlet valves to meet lower or precise flow requirements, valve clogging and leakage, meter or gage failures, inaccurate gage readings due to backwater conditions, physical changes to gage setup or channel conditions, and operational limits of the monitoring devices.

6.3.3 Imprecise Biological Responses to Restoration Measures

While the AMP aims to increase the likelihood of achieving desired project outcomes through actions within the control of Valley Water, it must be recognized that restoration projects inherently are challenged by uncertainties due to unpredictable biological responses, future climatic conditions and hydrology, and changes in land use or activities affecting aquatic habitat conditions. These uncertainties make it difficult to link population abundance to restoration measures.

An example of such difficulties is illustrated by the Central Valley Project Improvement Act (CVPIA) Anadromous Fish Restoration Program (AFRP; Bellmer 2004). The CVPIA was enacted in 1992 and established a goal of increasing the returns of adult salmon to the Central Valley from the 1967 to 1991 baseline average of 497,054 fish to a 15-year rolling average of natural production for all Central Valley Chinook salmon runs of 990,000 by 2065, doubling the baseline of 497,054. Under the AFRP, performance goals have been based on an increase in adult salmon abundance in the ocean or returning to the rivers to spawn (for example, salmon doubling goal). The adult salmon escapement estimates compiled by the CDFW (2020) for the most recent 5 years (November 2014 through April 2019) is 173,744 adult salmon, representing a substantial decline from the baseline and only 18% of the CVPIA target. The decline in abundance has occurred despite CVPIA implementation of restoration measures, including increasing instream flows, gravel augmentation, habitat restoration, and other management actions over the almost 30 years since the CVPIA was passed into law. A variety of environmental factors outside the control of CVPIA, such as recent major droughts in California, poor oceanic upwelling conditions, the introduction of non-native species, and other factors also affected salmonid population dynamics. This further demonstrates the difficulty and uncertainty inherent in using population abundance as a measure to evaluate effectiveness of the restoration efforts.

Nevertheless, population abundance and other aspects of population dynamics can be used to provide qualitative information on general trends and biological responses to restoration measures. For example, observations of adult steelhead or Chinook salmon spawning in a habitat enhancement area after spawning gravel augmentation, especially if spawning activity in adjacent control areas is low, can be used to assess beneficial effects of a management action. Similarly, observations of adult steelhead or salmon upstream of a passage barrier after remediation, when none were observed before modification of the passage barrier, can be used as direct evidence of a biological benefit of the management action. In contrast, if adult abundance is low before implementing restoration actions, and remains low after the actions have been implemented, no conclusion can be drawn with confidence that the actions had poor performance, or alternatively, that some other factor is constraining adult population abundance (for example, high predation mortality and poor ocean rearing conditions).

Collecting data on population metrics for long-term trends analysis will be included in the monitoring program. Depending on the numbers of juvenile and adult fish tagged and detected each year, uncertainties exist for detecting and evaluating these metrics. Because of the likelihood of small sample sizes and difficulties and challenges in determining causal mechanisms, population metrics will not be used as a measurable objective or the basis to determine overall program performance.

6.3.4 Funding Availability

The Settlement Agreement did not specify partnership funding contributions, but it limited Valley Water's initial funding to the FAHCE program. For example, Valley Water's funding commitment for Phase 1 measures is set at "a maximum of $42 million" (Settlement Agreement § 8.1.1). The Settlement Agreement also stipulated that for barriers owned by others, Valley Water "will make reasonable best efforts" with the parties and owners to "remove or remediate the passage barriers…" and "will undertake reasonable best efforts" to "secure additional funds necessary to perform the remediation". However, Valley Water "will fund not more than 50% of the costs to remediate these barriers..." (see §§ 6.4.2.1.2(B), 6.5.2.2(B), and 6.6.2.1(B)). While Valley Water focuses on effectively mitigating any adverse impacts resulting from its water supply facilities and operations, additional grants or partner contributions will be necessary to improve fisheries and habitat throughout the watersheds, especially in areas beyond the influence of Valley Water's facilities and operations.

6.3.5 Challenges During Program Implementation

In addition to limitations on funding, restoration measures included in this FHRP may be subject to CEQA environmental review, and state and federal permitting requirements. These processes could result in further schedule delays, or additional modifications to restoration measures that would make the efforts no longer feasible or cost-effective.

6.4 Implementation and Measurable Objectives

The measurable objectives will relate to those habitat qualities impacted by Valley Water's facilities and operations. Settlement Agreement § 7.3(A) recognized "that SCVWD is not responsible under this Agreement for other environmental conditions that may limit the population or distribution of these fisheries." Settlement Agreement § 6.2 recognized the need for balancing all beneficial uses as part of Valley Water's operations to "store, divert, and redivert water in a manner that is consistent with the Overall Management Objectives."

As part of developing the measurable objectives, consideration was given to monitoring and reporting both 1) compliance with the terms and conditions of the Settlement Agreement, and 2) validation that the management actions implemented by Valley Water are achieving the desired biological benefits of enhanced habitat access, quality, and availability. To achieve measurable objectives, implementation objectives are needed (for example, meeting the Settlement Agreement requirements for schedule for design, permitting, contracting, construction, monitoring, adherence with the instream flow rule curves, reporting, and others) for tracking compliance with management actions outlined in the Settlement Agreement. Measurable objectives are identified for validating the performance of management actions (for example, instream flow releases in accordance with the rule curves, summer water temperature management, winter pulse flows for attraction and migration, and evaluating non-flow habitat enhancement actions such as spawning gravel augmentation, and improvements to passage conditions at existing impediments) in achieving anticipated biological benefits, such as habitat suitability within the CWMZs for the various life stages of salmonids, or provision of migration flows during appropriate seasons. Measurable objectives included in the AMP relate to functions such as instream flows that provide sufficient water depths for juvenile and adult passage, and habitat functions within the CWMZs for spawning and rearing, suitable substrate size to accommodate spawning and egg incubation, and suitable summer water temperatures for juvenile steelhead summer rearing.

The AMT will include consideration of implementation objectives as part of compliance monitoring and measurable objectives as part of validation monitoring. The *Fisheries and Aquatic Habitat Collaborative Effort Summary Report* (Santa Clara Valley Water District 2003) explicitly stated that the performance objectives for validation monitoring "will relate to those habitat qualities impacted by the Water District's

operations, including conformance with reservoir releases; maintenance of suitable water temperatures for summer steelhead rearing; performance of fish passage facilities; and non-flow habitat enhancement."

As such, this section identifies implementation objectives for flow measures managed by Valley Water, and measurable objectives for suitable water temperatures for summer steelhead rearing, fish passage, the quality and availability of suitable fish habitat conditions, and for other non-flow measures.

6.4.1 Implementation Objectives for Flow Measures

Reservoir releases will directly affect habitat conditions for juvenile and adult migration, spawning and egg incubation, and juvenile rearing. The implementation objectives for flow measures will be based on reservoir storage and will include compliance with, and instream habitat suitability criteria resulting from implementation of the rule curves prescribing pulse flow operations, summer and winter baseflows, and temperature targets for the CWMZs in Stevens, Coyote, and Guadalupe Creeks (Three Creeks), and summer release storage targets in three reservoirs (Stevens, Guadalupe, and Anderson Reservoirs).

6.4.1.1 Flow Measure: Reservoir Releases Per Rule Curves

Seasonal instream flows are necessary for supporting the life history of steelhead and Chinook salmon. The reservoir rule curves provide reservoir releases to support seasonal instream flow to improve fish passage, and to provide suitable water depths and velocities for spawning and rearing habitat. These reservoir releases are based on reservoir storage of local (not including imported water) water at a specified time of year and they will be validated using measurable objectives (for example, specific water temperature, water depth, and velocity criteria) related to the flow measures.

Settlement Agreement (§§ 6.2.4.1, 6.4.2.1.1, 6.5.2.1, 6.6.2.1.2.1, 6.6.2.1.3.1, 6.6.2.1.4, and 6.6.2.1.5 and Appendix E) provided details on reservoir storage-based releases along with rule curves associated with each reservoir affected. Each of the rule curves prescribes the minimum instream flow, based on reservoir storage, for summer and winter baseflows and for pulse flows during the salmonid migration period. Maximum instream flows are not prescribed since high flow events are determined by local hydrology and runoff (including flood flows) that may exceed reservoir storage and release limitations. Chapter 3 *Stevens Creek Watershed (Phase 1 Measures)* through Chapter 5 *Coyote Creek Watershed (Phase 1 Measures)* also detail winter flow releases as prescribed in the Settlement Agreement.

From November 1 through April 30, winter baseflow releases were established to provide suitable spawning, passage, and rearing habitat. The measurable objective is to 1) comply with implementation objectives for winter baseflow rule curves based on measuring reservoir storage, cross referenced in Table 6-1; and 2) validate that the prescribed winter baseflow and pulse flows meet or exceed measurable water depth criteria for suitable adult and juvenile passage, spawning and egg incubation, and juvenile rearing (see Section 6.5.2 *Validation Monitoring*).

Table 6-1. Implementation Objectives for Winter Flow Releases

Reservoirs	Rule Curve Figure No.	Section No. of the FHRP Describing Measurable Objectives for Winter Flow Releases
Stevens Creek	3-3	3.4.2
Guadalupe	4-8	4.4.1.2
Almaden	4-9	4.4.2.2
Calero	4-10	4.4.3.2
Lexington and Vasona	4-11 and 4-12	4.4.4.2
Coyote and Anderson	5-4 and 5-5	5.4.2

Providing pulse flows during the salmonid migration period will provide suitable surface water connectivity and water depths for passage between the upstream spawning and rearing habitats and the Bay, thus improving passage conditions for adult steelhead to reach suitable spawning habitat and for outmigration of juvenile steelhead and Chinook salmon. When adequate reservoir storage is available in Anderson and Coyote Reservoirs combined, Stevens Creek Reservoir, and/or Guadalupe Reservoir, seasonal pulse flows will be provided between February 1 and April 30 for Coyote, Stevens, Guadalupe, Alamitos, and Calero Creeks. Pulse flows on Los Gatos Creek will be obtained through uncontrolled flows via storm events; no reservoir releases will be made for pulse flows in Los Gatos Creek.

Winter-pulse flows provide attraction flows for upstream migrating adult salmonids, environmental cues for downstream juvenile migration, and increased flows and water depths to facilitate fish passage. No pulse flow releases are required to be made if reservoir storage is less than the prescribed threshold.

Objectives regarding the magnitude and duration of pulse flow events (for example, compliance with implementation objectives), and the resulting suitability of water depths and surface water connectivity needed for adult and juvenile salmonid migration (Section 6.5.2 *Validation Monitoring*) will comply with the storage triggers and reservoir release schedule as listed in Table 6-2.

Table 6-2. Pulse Flow Operations Specified in the Settlement Agreement

Reservoir	Period	Storage Based Trigger	Rate (cfs)	Duration (days)	No. of Events Per Year	Instream Flow Gage
Stevens	February 1 – April 30	16 cfs winter baseflow rule curve plus 250 AF	50	5	2	SF-44
Guadalupe	February 1 – April 30	11 cfs winter baseflow rule curve plus 250 AF	50	5	2	SF-17
Almaden	February 1 – April 30	Storage >transfer rule curve	50	5	2	SF-16
Calero	February 1 – April 30	Storage >pulse flow curve	50	5	2	SF-13
Anderson	February 1 – April 30	Anderson/Coyote storage >80,000 AF	50	5	2	SF-82

If reservoir storage is above the prescribed threshold, the designated reservoir will release flows greater than 50 cfs for 5 consecutive days for up to two pulse flow events per year. Natural flow or spill events in excess of 50 cfs for 5 consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Results of monitoring for seasonal water temperatures, water depths, velocities, and passage connectivity (see Section 6.5.2 *Validation Monitoring*) will be used to assess and validate the degree to which steelhead habitat suitability for flow-passage, spawning, and juvenile rearing relationships are attained. These monitoring results will be included in an annual report provided to the AMT for evaluation of pulse flow operations to validate passage conditions attained by the program as part of the AMP.

6.4.1.2 Settlement Agreement Cold Water Management Zone Water Temperature Targets for Juvenile Rearing

To achieve the water temperature targets in the established CWMZ for summer releases, the Settlement Agreement included:

- Reservoir temperature profiles will be used to determine the hypolimnetic volume of water 14°C or less in Guadalupe Reservoir and Anderson Reservoir (and if required, Coyote Reservoir), and 15°C in Stevens Creek Reservoir, between April 15 and April 30.
- Additional monthly reservoir temperature profiles of Guadalupe and Stevens Creek Reservoirs from June through October will be measured for use in adjusting releases corresponding to changes in the measured hypolimnetic volume. Additional monthly surveys in Anderson and Coyote Reservoirs will be performed for the same time frame if needed.
- If the available cold water volume in Guadalupe and Stevens Creek Reservoirs would produce a cold water flow release of less than 1 cfs throughout the summer months, then releases will not be limited to the calculated cold water release and releases up to the recharge capacity of the system will be allowed. If there is insufficient cold-water storage in Anderson Reservoir to maintain 1 cfs at the bottom of the CWMZ, then releases will be equal to the total available cold-water storage less estimated evaporation divided by 184 days.

The Settlement Agreement established three CWMZs to support juvenile steelhead rearing during May 1 through October 31 in Stevens, Guadalupe, and Coyote Creeks (Table 6-3). Water temperature targets were specified for each respective CWMZ as available reservoir cold water supply allows. The target distance downstream for each CWMZ was estimated and agreed to by the TAC using a water temperature model and field temperature measurements, and was included in the Settlement Agreement.

Table 6-3. Compliance Locations for Cold Water Management Zone Temperature Targets (as Available Water Supply Allows)

Watershed	Extent of the CWMZ[a]		Temperature Targets	
	Reach Location	Target Miles[b]	Degrees in C	Notes (Not to Exceed)
Stevens Creek	From Steven Creek Dam outlets to approximately I-280	3.8	19/22	Average daily/ daily maximum
Guadalupe River	From Guadalupe Dam outlet to approximately Camden Avenue	3.3	18	Not to Exceed Average Daily
Coyote Creek	From Anderson Dam outlet to the upstream end of Ogier Ponds[c]	3.9	18	Not to Exceed Average Daily

[a] The Settlement Agreement specified maintenance of cold-water temperature targets throughout the CWMZs as available cold-water storage will allow.

[b] Note that the length of the CWMZ and water temperatures will vary depending on the cold water volume in reservoir storage, air temperatures, wind, and other factors within and among years for each reservoir and creek system.

[c] The Settlement Agreement defines the extent of the CWMZ to the old Riverside Golf Course entrance, the current functional end of the CWMZ is at the upstream end of Ogier Ponds.

The length of each CWMZ will vary within and among years based on variation in reservoir cold water storage volumes, release temperature, instream flows, air temperature, and other factors. A network of self-contained water temperature recorders will be deployed as part of the annual monitoring program to provide the AMT annual and trend information on the aerial extent of habitat in the CWMZs meeting the temperature targets as part of the AMP. The seasonal water temperatures identified in Table 6-3 serve as measurable objectives for the purpose of validating the effectiveness of the summer baseflow releases and reservoir temperature management in providing suitable habitat conditions for juvenile steelhead rearing in each designated CWMZ.

6.4.1.3 Settlement Agreement Summer Release Storage Targets

For Calero, Almaden, and Lexington Reservoirs, cold water releases were not required in the Settlement Agreement. Instead, summer baseflow releases have been developed not to exceed minimum reservoir storage levels for beneficial uses and are shown in Table 6-4.

Table 6-4. Minimum Storage Levels for Calero, Almaden, and Lexington Reservoirs Based on Available Reservoir Storage

Reservoirs	Calero	Almaden	Lexington
Pool storage (AF) by December 1	4,000	400	2,000
Purposes of storage target	Emergency storage	Minimum storage	Maintain the recreation pool; minimum storage

6.4.1.4 Instream Flow Ramping

The requirements for instream flow ramping are prescribed in the Settlement Agreement (Exhibit E). Implementation of the prescribed flow ramping criteria is intended to avoid stranding salmonids and other fish during instream flow recession. Monitoring ramping rates will be limited to determining compliance with the requirements outlined in the Settlement Agreement. Ramping will occur over a maximum of four steps for flow decreases of 50 cfs or less (reductions in flows of approximately 50% per step at equally spaced timesteps for a maximum 36-hour ramping period), while ramping will occur over a maximum of seven steps for flow decreases greater than 50 cfs (equally spaced timesteps for a maximum 72-hour ramping period). The minimum reduction in flow during each ramping step will be 2 cfs. Results of instream flow monitoring at stream gages located immediately downstream of each managed reservoir will be used to provide data on actual flow ramping rates.

6.4.2 Measurable Objectives for Salmonid Passage, Spawning, and Rearing

Scientific information has been compiled on habitat suitability indices (HSI) from the scientific literature and fishery studies on habitat suitability for each life stage of steelhead and Chinook salmon (Roni et al. 2012; Raleigh and Nelson 1986; Hampton et al. 1997; and many others). Results of habitat suitability observations are also available from the Three Creeks. The suitability of a habitat metric, such as water depth, for each life stage of the target species, such as juvenile steelhead rearing, is then identified on a HSI scale ranging from 0 (in this example, habitat depth is unsuitable) to 1.0 (habitat depth is completely suitable). The FAHCE Technical Work Group reviewed and selected HSI criteria considered to be most representative of habitat conditions in the Three Creeks watersheds. The HSI relationships were used to identify measurable objectives for use in the AMP. Hydrologic simulation modelling was then used to estimate flow-habitat relationships as the technical basis for the rule curves included in the Settlement Agreement. The instream flows prescribed by the rule curves will vary among years in response to annual and seasonal variation in precipitation and resulting reservoir storage. Instream flows, and associated water depths and velocities affecting habitat suitability for spawning, passage, and rearing, will vary based on the rule curves with greater instream flow releases in wetter years with greater storage and lower instream flows in dry water conditions. Validation monitoring of habitat conditions discussed below will be used to refine flow-habitat relationships.

Specific measurable objectives were established based on instream flows for salmonid passage, spawning, and juvenile rearing. Flow-related functions affecting habitat suitability such as water depth and water velocity for spawning, rearing, and passage are included as measurable objectives, consistent with design criteria for non-flow physical habitat enhancement actions and passage barrier remediation. Measurable objectives identified for adult spawning and juvenile rearing will be monitored within the designative CWMZs (shown on the maps as spawning and rearing habitat) while monitoring to validate habitat suitability for adult and juvenile passage (shown on the maps as migration habitat) may occur throughout the reach between

each dam and the Bay. Measurable objectives for habitat suitability are highlighted below and listed in Table 6-5.

Table 6-5. Measurable Objectives for Fish Passage, Spawning, and Rearing Related to Instream Flows

Life Stages	Water Depth (feet)		Velocity (ft/sec)
	Chinook	Steelhead	Both
Adult Passage at Critical Riffle	0.9+	0.7+	<6.0
Adult Spawning	0.9+	0.7+	1.0 – 3.0
Juvenile Outmigration Passage	0.3	0.4	Not Applicable
Rearing Habitat Velocity (ft/sec)	0.3 – 3.2	0.5 – 3.9	0.1 – 2.8

Notes: ft/sec = feet per second
Source: FAHCE Draft EIR, Appendix N *Habitat Availability Estimation Methodology*

- When adequate reservoir storage is available, provide winter pulse flows that meet a water depth of 0.7 foot or greater over 25% of the channel cross section at critical riffles for adult steelhead upstream migration. Water depths would be measured at critical riffles identified as potential flow-related passage impediments.
- Provide winter base flows for steelhead spawning to reach a depth of 0.7 foot or greater, and velocities within the range from 1.0- to 3.0 feet per second (ft/sec) when reservoir storage allows. Water depths and velocities will be measured within habitat considered to be potentially suitable for steelhead spawning (typically within the reaches identified as CWMZs) based on habitat characteristics such as availability of suitable spawning gravel.
- Provide summer baseflows that maintain suitable water temperatures (Table 6-3) and water depths (Table 6-5) in the CWMZs based on reservoir storage as outlined in the Settlement Agreement.

6.4.3 Measurable Objectives for Non-flow Measures

Over the past two decades, Valley Water has completed implementation of some of the measures specified in the Settlement Agreement. For example, 10 of 18 priority fish barriers named in the Settlement Agreement, and owned by Valley Water and others, have been removed in the Three Creeks, and a geomorphic function improvement project was completed in Stevens Creek. These completed projects will be maintained and monitored by project owners, and will collectively contribute to complying with the requirements of the Settlement Agreement for fish passage barrier removal, geomorphic function improvements, and instream habitat improvements consistent with Settlement Agreement § 6.4.2 and 6.4.3.

Measurable objectives for validation monitoring non-flow measures that will be implemented in the future (for example, Phase 1) must be based on functionality and compliance with habitat suitability criteria and, at a minimum, would include measurable objectives related to adequate water depth, habitat area, and substrate size. The *California Salmonid Stream Habitat Restoration Manual* (Flosi et al. 2010) provides design criteria and measurable objectives for non-flow habitat enhancement actions that, at a minimum, will be applied as measurable objectives for future non-flow measures. These design criteria may be supplemented or replaced in the future with, site-specific measurable objectives developed as part of the project planning process and environmental review and permitting (for example, Anderson Dam Seismic Retrofit Project EIR and Biological Assessment for USACE permitting and ESA Section 7 consultation) for each individual future non-flow measure project. For projects yet to be implemented, each project may go through feasibility studies, planning design, environmental review and permitting, engineering design, and construction processes. Each project may apply site-specific design criteria or latest guidance or standards for planning and design that will serve as measurable objectives for that project. For example, there may be

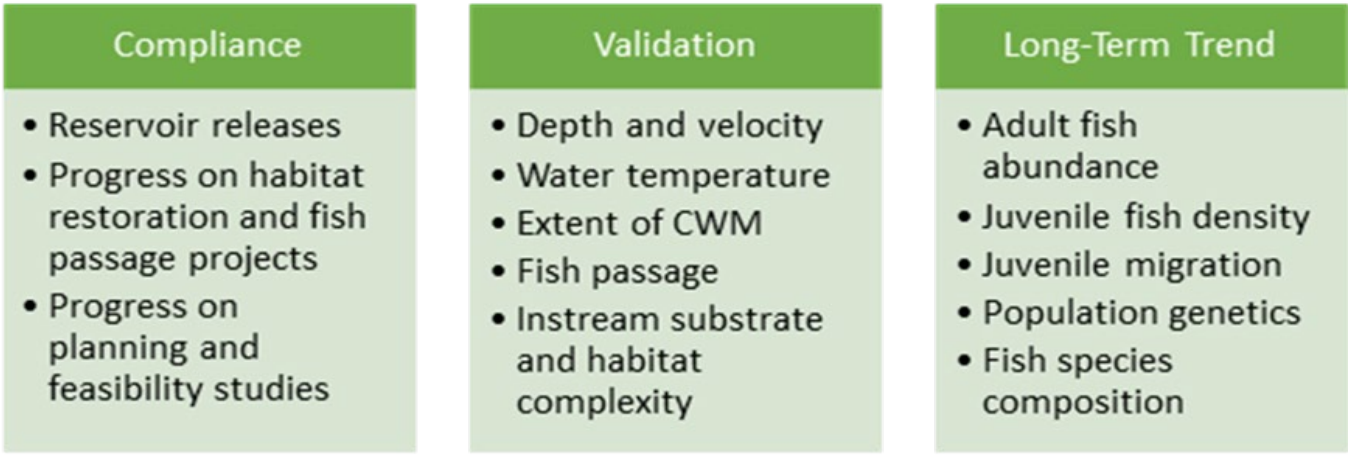
new standards or guidance for channel modification projects for spawning gravel augmentation as well as large woody debris (LWD) and boulder placement for increased habitat complexity and diversity within identified spawning areas and juvenile rearing habitats. Projects built in accordance with these updated standards or guidance will further improve the habitat qualities, provide the desired biological benefits (for example, function as spawning and juvenile rearing habitat or provide salmonids increased access to suitable habitat such as improved passage).

Measurable objectives for future non-flow measures will be tailored depending on site-specific characteristics and habitat functions intended by the project. For example, measurable objectives for remediation of a passage impediment could include water depth and velocities suitable for adult salmonid passage. Similarly, measurable objectives for habitat enhancement projects could include the size range of substrate suitable for salmonid spawning (average substrate diameter is 0.5 to 2 inches for steelhead and 0.4 to 3 inches for Chinook salmon); substrate embeddedness of 26% to 50% or less indicating acceptable spawning habitat quality, size, and number of boulders or LWD (less than 5 feet from suitable rearing habitat to instream or overhead cover structure); square footage of the enhancement project (minimum suitable patch size for spawning of 20 square feet); objectives for flow-depth (0.7 foot or greater for steelhead and 0.9 foot or greater for Chinook salmon); and flow-velocity (1.0 to 3.0 ft/sec for steelhead and Chinook salmon) criteria.

6.5 Monitoring Program

The monitoring program is designed to track progress towards achieving the implementation and measurable objectives outlined above and has been organized into three categories: compliance, validation, and long-term trend (as shown in Figure 6-4).

Figure 6-4. Three Categories of Monitoring



These categories are adapted from the CDFW Ecosystem Performance Measures website and can be further explained as follows:

- Compliance monitoring includes administrative metrics from the Settlement Agreement such as reservoir releases and cold-water pool volume, compliance with the schedule for implementing a particular program element (like a site-specific passage impediment remediation project), or progress on planning or feasibility studies.
- Validation monitoring includes physical monitoring of instream flows, depth, velocity, water temperatures within each CWMZ, area of enhanced habitat, jump height and pool depth for passage

impediments, habitat mapping to assess suitability for various life stages of salmonids, validating flow-habitat relationships per the HSI metrics, and other elements of the program.

- Long-term trend monitoring includes evaluation of ecosystem responses to management actions and/or natural drivers, including monitoring adult fish abundance, juvenile fish density/migration, genetics, and species composition.

To link the monitoring program to the implementation and measurable objectives, Table 6-6 provides a conceptual model linking monitoring activities, measurable objectives, and metrics to be monitored.

Developing, permitting, implementing, and reporting on the monitoring program activities would be the responsibility of Valley Water. The monitoring program supports a network of monitoring devices and field monitoring activities, and provides data needed to track compliance with rule curve implementation, validate progress towards meeting measurable objectives, and understanding trends in fish populations within the watersheds. Data collected will be analyzed, reported annually to the AMT, and used for identifying potential adaptive actions for consideration by the AMP.

The monitoring program builds on existing monitoring infrastructure (for example, Valley Water hydrologic monitoring network), water quality monitoring (for example, water temperature monitoring network), habitat monitoring (for example, habitat mapping), and fishery monitoring (for example, Vaki Riverwatcher, PIT tag antennas, genetics sampling, and electrofishing surveys) implemented in the Three Creeks watersheds by Valley Water over the past several years. The following sections provide additional discussion on each of the key elements of the monitoring program.

Table 6-6. Linkages Between Monitoring Activities and Measurable Objectives

Categories	Brief Description of Activities	Objectives Being Addressed	Metrics Monitored
Compliance Monitoring for Tracking Restoration Measure Implementation	• Collect stream and reservoir gage data to track rule curve implementation • Track progress on non-flow measures implementation, including permitting and project implementation	Settlement Agreement Requirements: Are the rule curves implemented as intended, specifically: • Do winter and summer baseflows comply with the prescribed rule curves based on reservoir storage? • Were reservoir operations successful in meeting ramping rate criteria when instream flows were decreased? • Did pulse flows trigger successfully at the correct reservoir storage threshold and what was the timing, magnitude, and duration of each pulse flow event? • Are non-flow measures implemented as scheduled? • Are activities in compliance with sampling activity permits?	• Reservoir level (AF storage) • Stream gages (cfs) for seasonal instream baseflows • Stream gages for winter pulse flows timing, magnitude (cfs), and duration of each pulse flow event • Progress on site-specific non-flow habitat and passage enhancement measures • Compliance with sampling permits
Validation Monitoring for Validating Habitat Improvements	• Perform field measurements at selected locations to validate progress towards intended habitat improvements; reaches of each creek where habitat suitability for spawning, rearing, and migration are shown on maps of each watershed • Analyze data and compare to measurable objectives to identify potential adaptive measures	Measurable objectives: • Do winter baseflows produce suitable depth and velocities for salmonid spawning and incubation (see Table 6-5)? • Do pulse flows produce the sufficient connectivity, duration, depth, and velocity at critical riffles and stream reaches for adult and juvenile salmonid passage (see Table 6-5)? • Do summer rearing flows provide suitable depth and velocities for juvenile rearing steelhead (see Table 6-5)? • Were temperatures in the CWMZs adequate to support suitable over-summering habitat for juvenile rearing steelhead in the three CWMZs (see Table 6-3)? • Following implementation, are passage and non-flow habitat enhancement actions functioning to support suitable habitat for the target species and life stage?	• Depth at critical riffles for passage • Depths within reaches characterized as spawning and rearing habitat • Velocity (ft/sec) at critical riffles for upstream adult passage • Velocities in reaches characterized as spawning and rearing habitat • Water temperature within the CWMZs • Extent of CWMZ (annual average length of CWMZ) • Fish passage structure jump height, velocity, and depth as appropriate to each site-specific passage impediment before and after remediation • Extent of geomorphic function restoration

Categories	Brief Description of Activities	Objectives Being Addressed	Metrics Monitored

Long-term Trend Monitoring for Understanding Trend	• Conduct fisheries monitoring annually
	• At the end of 10, 20, and 30 years of program implementation, synthesize monitoring data for trend analysis
		Trend monitoring:
		• Annually:
		  ○ Are salmonids migrating during pulse flow events?
		  ○ Are adult salmonids migrating into the CWMZ; did they make it past downstream passage impediments or remediated barrier sites?
		  ○ Are juvenile steelhead utilizing the CWMZs for summer rearing?
		• At the end of 10, 20, and 30 years of program implementation:
		  ○ What are the status and trends of habitat usage over time?
		  ○ Is there a long-term trend with respect to timing of upstream migration and outmigration?
		  ○ What are the status and trends of native fish abundance and composition over time?
		  ○ Has the steelhead genetic composition shifted over time?
			• Migration timing
			• Relative trend in density of salmonids
			• Fish species abundance, diversity, and community characteristics over time
			• Juvenile steelhead yearly growth
			• Habitat metrics and usage over time
			• Steelhead genetics

6.5.1 Compliance Monitoring

Compliance monitoring will inform whether the flow and non-flow measures outlined in the Settlement Agreement have been implemented as planned or intended. The monitoring activities include:

- Tracking flow measure implementation status; for example, tracking to determine if rule curves are implemented as prescribed (such as baseflow rule curve, ramping rates, and pulse flow implementation/compliance) based on flow measurements available through the Valley Water hydrologic monitoring network;
- Scheduling and tracking annual flow allocations, water budgets, and water expenditures;
- Tracking implementation of non-flow measures such as habitat enhancement and fish passage improvement projects, including studies, planning, design, permitting, and construction status;
- Tracking monitoring/sampling permit compliance activities;
- Tracking financial expenditures by Valley Water in support of the FAHCE program as outlined in the Settlement Agreement (such as costs associated with FAHCE administration, instream flow releases, implementation and maintenance of non-flow habitat and fish passage enhancements, monitoring, and reporting); and
- Tracking, updating, and disseminating data; coordinating the annual AMT meeting, including documenting areas of agreement and areas of disagreement within the AMT; and preparing draft and final annual reports.

Monitoring locations are shown in Figure 6-5, Figure 6-6, and Figure 6-7.

Instream flow measurements will be used to document reservoir releases and flows associated with summer and winter baseflows, seasonal pulse flow operations for adult and juvenile salmonid migration, and flow ramping when instream flows decrease (compliance with implementation objectives). Results of flow monitoring and compliance with implementation objectives (such as rule curves prescribing baseflows, pulse flow operations, and ramping) will be summarized in the annual reports submitted to the AMT for review. Water storage in each reservoir and seasonal measurements of cold water pool storage in those reservoirs associated with operation of a CWMZ as described in the Settlement Agreement will be routinely monitored and applied to the storage triggers associated with implementation and management of the rule curves, pulse flows, and CWMZs as described below.

Providing instream flows (both baseflows and seasonal pulse flows) at the appropriate time of the year is critical for improving passage for adult and juvenile salmonids and improving habitat quality and availability. The flow releases will follow the rule curves outlined in the Settlement Agreement and seasonal and pulse flow operations described in the FAHCE and ADSRP Final EIRs based on the Settlement Agreement flow measures. Water uses for both baseflow and seasonal pulse flow releases will be included in the annual report (see Section 6.6.4 *Annual Report*). The annual report will also include cumulative water releases in subsequent years.

If monitoring reveals that flow or non-flow measures are not implemented as planned, recommended corrective actions or reasons for not being able to implement program actions will be reported in the annual report. Sections 6.6 *Adaptive Management Team* and 6.7 *Decision Making Process* provide additional details on the annual report, AMT, and decision making process.

Figure 6-5. Location Map for Compliance Monitoring in Stevens Creek Watershed

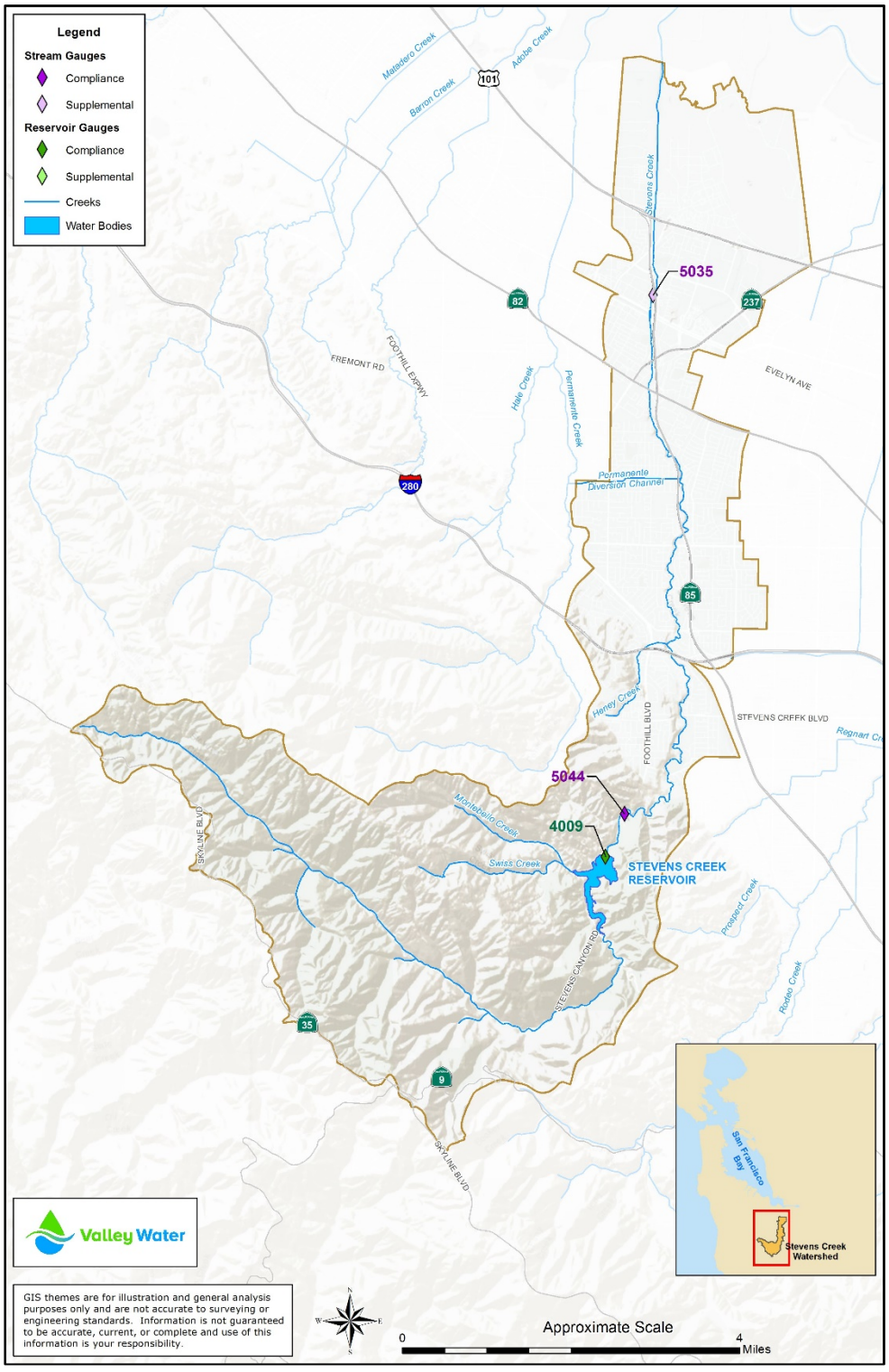


Figure 6-6. Location Map for Compliance Monitoring in Guadalupe River Watershed

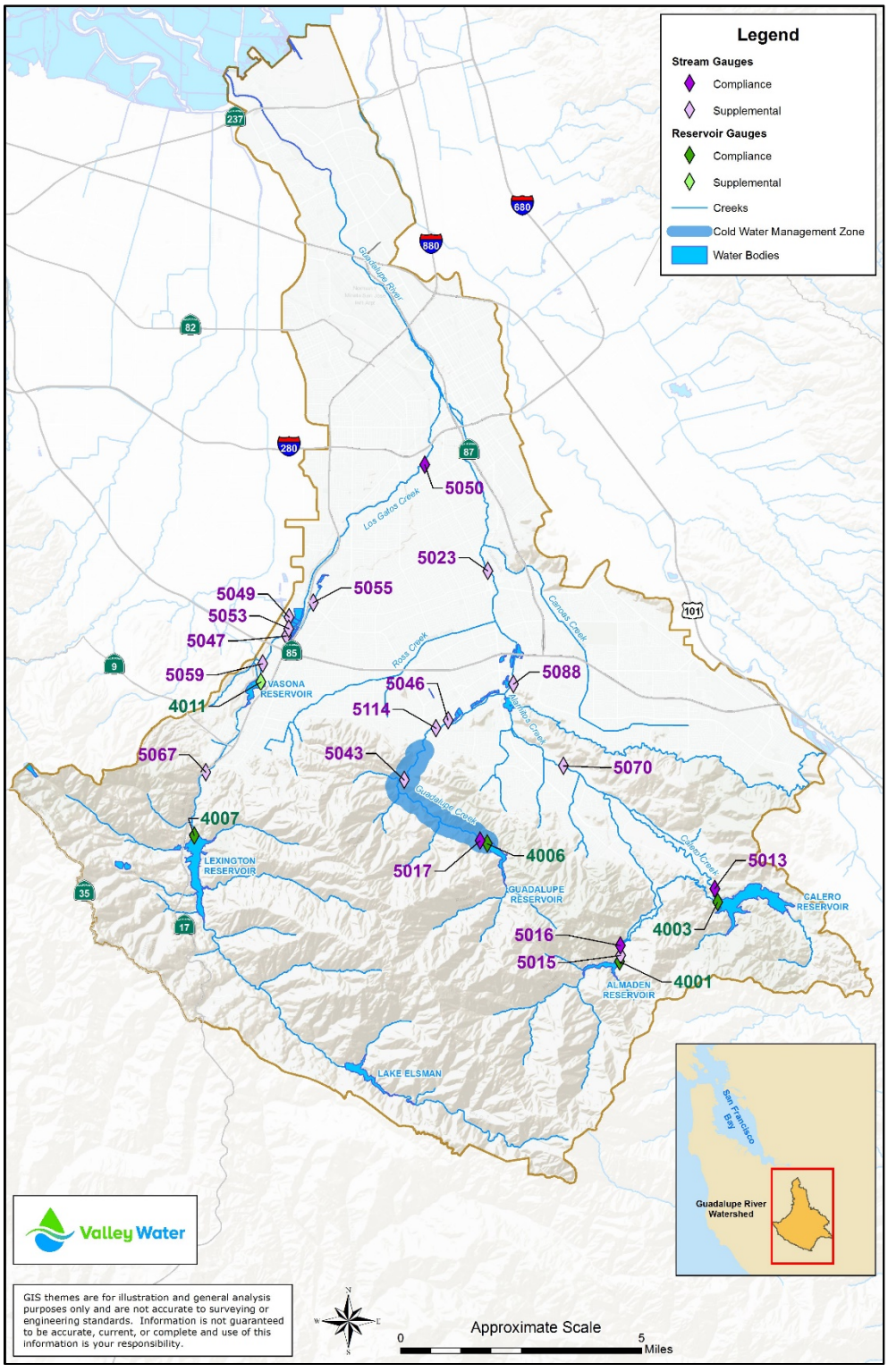
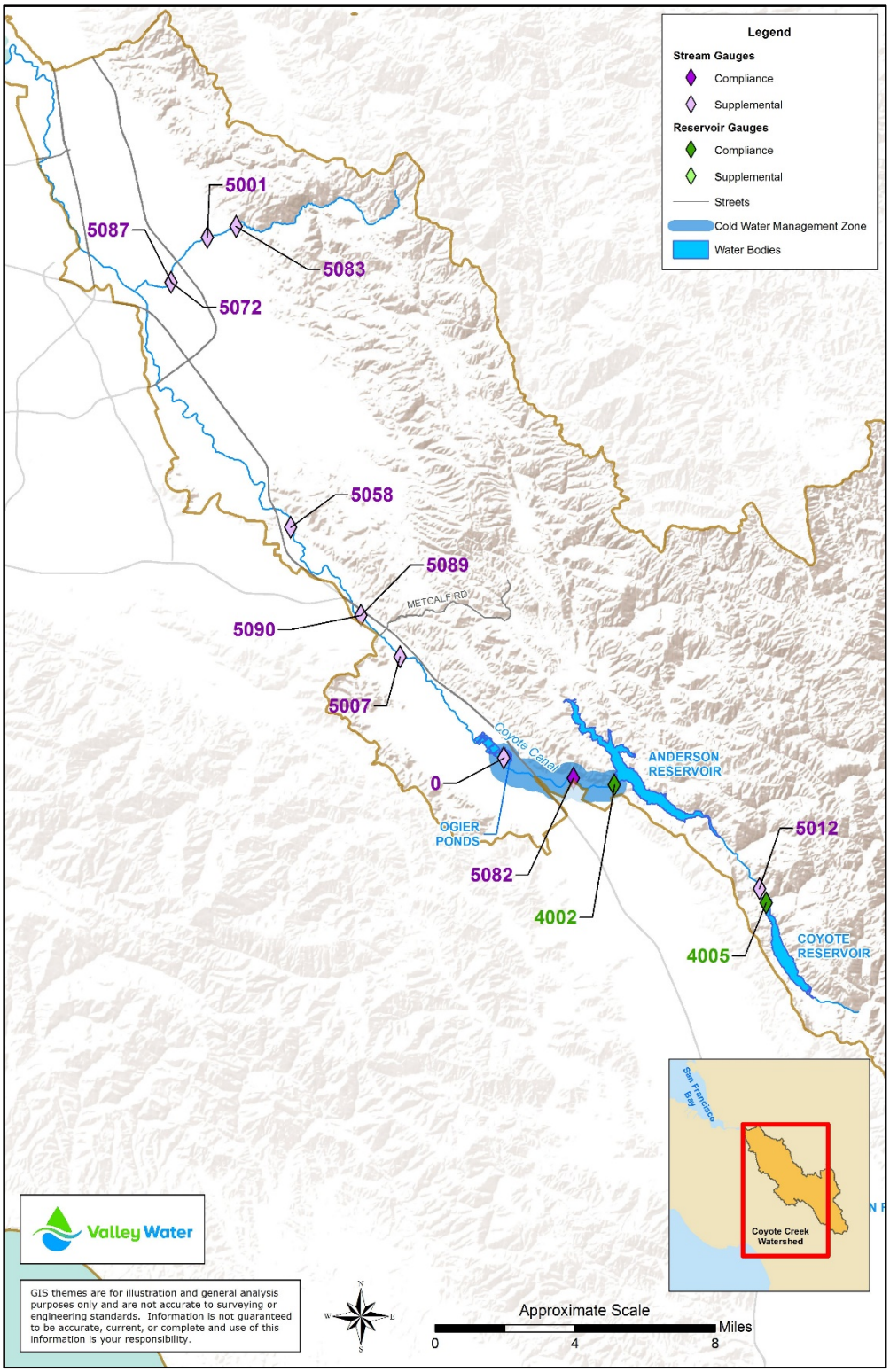


Figure 6-7. Location Map for Compliance Monitoring in Coyote Creek Watershed



6.5.1.1 Existing Network of Hydrologic and Water Temperature Monitoring Devices

Valley Water operates and maintains a network of gages to collect data on reservoir storage, instream flows, precipitation, and water temperature to provide the monitoring infrastructure for collecting watershed and site-specific data needed for the monitoring program. Instream flow measurements will be routinely made using Valley Waters-established hydrologic monitoring network of calibrated stream flow gages. Two new stream gages are planned to be installed as part of the FAHCE program at this time. Results of monitoring will be reviewed as part of the annual report each year by the AMT, and additional gages or monitoring equipment or relocation of existing gages may be recommended.

Valley Water collects hydrologic data as a part of its Hydrologic Data Measurement and Management Program. The County-wide network consists of 46 precipitation stations, 83 streamflow stations or gages, 10 reservoir water surface elevation monitoring gages, four water temperature monitoring stations, and one weather-evaporation station. The network collects and stores real-time data on precipitation, reservoir elevation, reservoir releases, water temperatures, and instream and diversion flows to inform water supply operations and adaptive management. Additional self-contained water temperature loggers are also deployed annually to monitor and record water temperatures within each watershed.

There are 14 gages used for compliance monitoring in the Stevens Creek, Guadalupe River, and Coyote Creek watersheds. Stream gages are located downstream of each reservoir outlet to measure and record reservoir releases and downstream flows (Figure 6-3 through Figure 6-5). Many stream gages are configured with a permanent instream weir structure that allows hydraulic or pneumatic stream gages to measure and record the water depth, or stage, every 15 minutes.

Hydrographers perform quality control and assurance measures (calibration/validation) on the existing monitoring gages monthly. The hydrographers document gage observations, collect gage height records, and perform routine maintenance following Valley Water's established Stream Gage Operation and Maintenance and Record Computation Procedures. Hydrologic monitoring within the watersheds is consistent with USGS standards.

The water level in each reservoir is related to the volume, or storage, of water measured in AF. Each reservoir is equipped with a USGS-approved datalogger that measures, records, and relays water surface elevation information to Valley Water staff. Using bathymetric survey results for each reservoir, a relationship has been established between water surface elevation (water depth) and reservoir storage volume. The volume of stored reservoir water is estimated by calculating the difference between the volume of inflows and the volume of outflows and evaporation, as well as by reservoir gages that indicate the depth of the water column related to the maximum depth of the reservoir.

6.5.1.2 Time, Duration, Frequency, and Locations of Flow Monitoring

Compliance monitoring associated with flow measures addresses implementation objectives associated with the rule curves and seasonal pulse flows, and is intended to answer the following questions:

- Do winter and summer baseflows comply with the prescribed rule curves for each watershed based on reservoir storage?
- Were reservoir operations successful in meeting ramping rate criteria when instream flows were decreased?
- Did pulse flows trigger successfully at the correct reservoir storage threshold and what was the timing, magnitude, and duration of each pulse flow event?

Using the Valley Water hydrologic monitoring network, data will be collected throughout the year at specific locations (see Figure 6-5through Figure 6-7) to compare with the prescribed Reservoir Reoperations Rule Curve and ramping rates as specified in the Settlement Agreement. Reservoir storage (the volume of water

in the reservoir measured in AF) will be correlated with the reservoir release rate (the volume of water per unit time; cfs), as measured immediately downstream of each main reservoir release point (see Table 6-7).

Table 6-7. Instream Flow Gages for Compliance Monitoring

Gage Identification	Reservoir Storage Trigger Location	Stream
5044 (SF-44)	Stevens Creek	Stevens Creek
5013 (SF-13)	Calero	Calero Creek
5016 (SF-16)	Almaden	Alamitos Creek
5017 (SF-17)	Guadalupe	Guadalupe Creek
5050 (SF-50)	Lexington	Los Gatos Creek
5082 (SF-82)	Anderson/Coyote	Coyote Creek

Reservoir storage triggers and instream flows for winter baseflows will be measured between November 1 and April 30. Summer baseflows will be measured during the period from May 1 through October 31.

Reservoir storage and release flows will be monitored throughout the year to check for compliance with winter and summer baseflows as prescribed in the Settlement Agreement. Pulse flow triggers, magnitude (cfs), and duration will be monitored and checked as shown in Table 6-8.

Table 6-8. Monitoring Duration and Frequencies for Flow Measures

Types of Flows	Season of the Year			
	Fall	Winter	Spring	Summer
Baseflows	Average daily flows will be computed using hourly intervals to calculate 3-day rolling averages for reporting winter baseflow from November 1 to April 30 and summer baseflow from May 1 to October 31			
Ramping	Ramping flow monitoring and data analysis year-round			
Pulse flows	Pulse flow monitoring and data analysis February 1 through April 30		No pulse flows in summer/fall	

Note: It should be noted, however, that variation in instream flows, especially at low flow levels, is expected to occur as a result of factors such as a shift in the stage-discharge rating curve, changes in evapotranspiration and evaporation in response to changes in air temperature, wind, and other factors; variation in water diversions by others; and groundwater accretions and depletions. Valley Water operates to maintain instream flows at prescribed levels, but unexpected variation can occur.

6.5.1.3 Reservoir Rule Curves

Compliance monitoring for winter baseflows will track both reservoir storage and measured flows released to each creek. A similar set of seasonal rule curves are used to manage summer baseflow releases in addition to measurable objectives designed to maintain suitable water temperatures within the designated CWMZs downstream of Stevens Creek, Guadalupe, and Anderson Reservoirs. Compliance with Settlement Agreement requirements for instream flows would be measured and compared to the prescribed reservoir FAHCE rule curves for each facility based on reservoir storage volume.

Data from specified reservoir and stream gages will be collected year-round. Winter baseflow, pulse flows, and summer baseflows will be monitored at gages located downstream of each reservoir (Figure 6-5 through Figure 6-7, and Table 6-7). Stream flows will be measured to document pulse flow characteristics. Ramping rates for flow reductions will also be monitored and reported year-round. Compliance with the instream flows released for both winter and summer baseflows in accordance with the specified reservoir rule curves will be determined based on a 3-day rolling average of flow measurements at the specified existing streamflow gage. It should be noted, however, that variation in instream flows, especially at low flow levels, is expected to occur as a result of a number of factors such as a shift in the stage-discharge rating

curve; changes in evapotranspiration and evaporation in response to changes in air temperature, wind, and other factors; variation in water diversions by others; and groundwater accretions and depletions. Valley Water operates to maintain instream flows at prescribed levels, but unexpected variation can occur.

Winter pulse flow releases are determined by measuring reservoir storage during the steelhead migration season (February 1 through April 30) and the corresponding prescribed pulse flow trigger. Pulse flows are measured at the stream gage located closest to each reservoir outlet (Figure 6-5 through Figure 6-7, and Table 6-7). No pulse flow releases will be made from Lexington Reservoir. Spill events or reservoir releases in equal to or in excess of the magnitude and duration of prescribed pulse flows (flows greater than 50 cfs for 5 consecutive days) during the migration period are considered to be a pulse flow event.

Compliance monitoring will evaluate operational responses to the pulse flow triggers in the FHRP, including magnitude and duration of pulse flow events. Monitoring results will be used to document the number of pulse flow events that occurred in each year, their timing, and their duration and magnitude.

Instream flow reductions due to base flow or pulse flow implementation in accordance with rule curves, and flood control releases will be ramped down for flow changes to reduce the risk of juvenile steelhead and Chinook salmon stranding during flow reductions. Flow ramping under the Settlement Agreement requires large reservoir releases to be slowly decreased, over a set period of time, to minimize impacts to salmonids and other fish species. The flow-ramping program is year-round. Compliance monitoring requires the documentation of flows at the hydrologic monitoring gage located immediately downstream of each reservoir (see Figure 6-5 through Figure 6-7, and Table 6-7) to document flow operations for a sample of ramping events over the first 5 years of FHRP implementation. In addition, effects of instream flow ramping operations will be assessed using flow gage data (such as stage-discharge relationships), as needed at 5-year intervals or following channel forming flow events (such as bank full flows) during Phase 1. Table 6-8 summarizes monitoring actions for flow ramping.

Settlement Agreement § 6.3 included provisions to modify instream flow releases in the event of an emergency (see Section 6.8.5 *Temporary Modification in the Event of Emergency*). In the event of a mechanical failure of a reservoir outlet or other emergency operation that results in a high risk of salmonid stranding as a result of flow ramping, Valley Water will implement a fish rescue and relocation plan. The fish rescue effort will use a variety of collection methods, including beach seines and electrofishing to collect fish at risk of stranding and transport them to release sites located elsewhere in the Three Creeks watersheds where there are sufficient instream flows and habitat. The fish rescue and relocation plan will be prepared as part of the sampling permitting process and made available to the AMT for review. The actual collection, transportation, and release sites and methods may vary based on site-specific factors and environmental conditions encountered during a fish rescue and relocation effort. Within 30 days of conducting a fish rescue, a technical memorandum will be prepared by Valley Water documenting any fish rescue and relocation effort (to include date and time of the event, location and extent of dewatering, collection methods, number of individuals of each species collected, observations of health, condition, initial survival of fish released, release location, and incidental take of protected species). Documentation of the fish rescue and relocation will be provided to the AMT and the sampling permit contact within NMFS, USFWS, and CDFW.

6.5.1.4 Compliance Monitoring for Implementation of Non-flow Measures

The Settlement Agreement included habitat enhancements (including gravel augmentation and placement of LWD and boulders) for salmonid spawning and rearing, and site-specific priority fish barrier remediation to facilitate salmonid migration and access to suitable upstream spawning and rearing habitat. The Settlement Agreement also stipulated that a geomorphic restoration of at least 2,000 linear feet of reaches would occur in each watershed. Non-flow measures also include watershed-specific measures, including planning and feasibility studies for several prescribed investigations. Although the primary focus of enhancing instream habitat within the Three Creeks is on steelhead, the restoration actions are expected to

provide benefits to multiple aquatic species, including Chinook salmon, inhabiting the watersheds including other fish species, reptiles, and amphibians (Beranek et al. 2021).

Compliance monitoring for implementation of non-flow measures will focus primarily on project progress for completion of engineering and restoration plans, CEQA compliance and project permitting, construction, and initial verification of as-built installation. The schedule for completing non-flow elements of the program will be updated periodically as new information becomes available through the planning process, including budget constraints and opportunities.

The progress of these non-flow projects will be tracked and included in the annual report. The report on progress will be qualitative in nature and will provide status on planning, design, permitting, construction, and completion of the measures.

6.5.2 Validation Monitoring

Validation monitoring will be performed as part of FAHCE implementation associated with evaluating performance of the flow measures (releases pursuant to the rule curves); summer water temperature management in the CWMZs; and non-flow measures to support juvenile and adult salmonid passage, spawning, juvenile rearing, and water temperatures in the CWMZs. Validation monitoring is intended to address the following management questions:

- Do winter baseflows produce suitable depth and velocities for salmonid spawning and incubation?
- Do pulse flows produce sufficient connectivity, duration, and depth at critical riffles and stream reaches for adult and juvenile salmonid passage?
- Do summer rearing flows provide suitable depth and velocities for juvenile rearing steelhead?
- Were temperatures in the three CWMZs within the targets outlined in the Settlement Agreement?
- Do the fish passage projects meet fish passage criteria (such as suitable water depth, velocity, and jump height; see Sections 6.5.2.4 *Barrier Remediation Analysis* through 6.5.2.6 *Rearing Habitat within the Designated Watersheds*) during the range of flows salmonids are expected to migrate?
- Do the habitat complexity projects (such as gravel augmentation, boulders, and LWD; see Sections 6.5.2.4 *Barrier Remediation Analysis* through 6.5.2.6 *Rearing Habitat within the Designated Watersheds*) produce substrate and habitat conditions as designed (such as suitable range of substrate sizes, suitable water depths, area, and cover; see Sections 6.5.2.4 through 6.5.2.6)?

Stream reaches for validation monitoring have been identified through prior field surveys based on habitat characteristics and biological functions for salmonids. For example, validation monitoring of baseflows and seasonal pulse flows in meeting the measurable objectives for water depth for passage (Table 6-5) will be monitored at three to five critical riffles at the designated instream flow within the Stevens Creek, Guadalupe River, and Coyote Creek watersheds. Exact locations of critical riffles for passage depth validation monitoring may vary from year to year in response to geomorphic processes and will be included in the annual report. Using standard survey protocols, transects will be identified across the riffle crest at each designated critical riffle and water depth will be measured across each transect (typically at 1-foot intervals across the stream channel) to assess the instream flow-water depth for juvenile and adult passage relationships. Similarly, specific locations will be identified for validation monitoring within the juvenile rearing and spawning reaches. The general locations of the functional reaches where validation monitoring for flow and non-flow management actions are shown in Figure 6-8 through Figure 6-10.

Figure 6-8. Location Map for Validation Monitoring in Stevens Creek Watershed

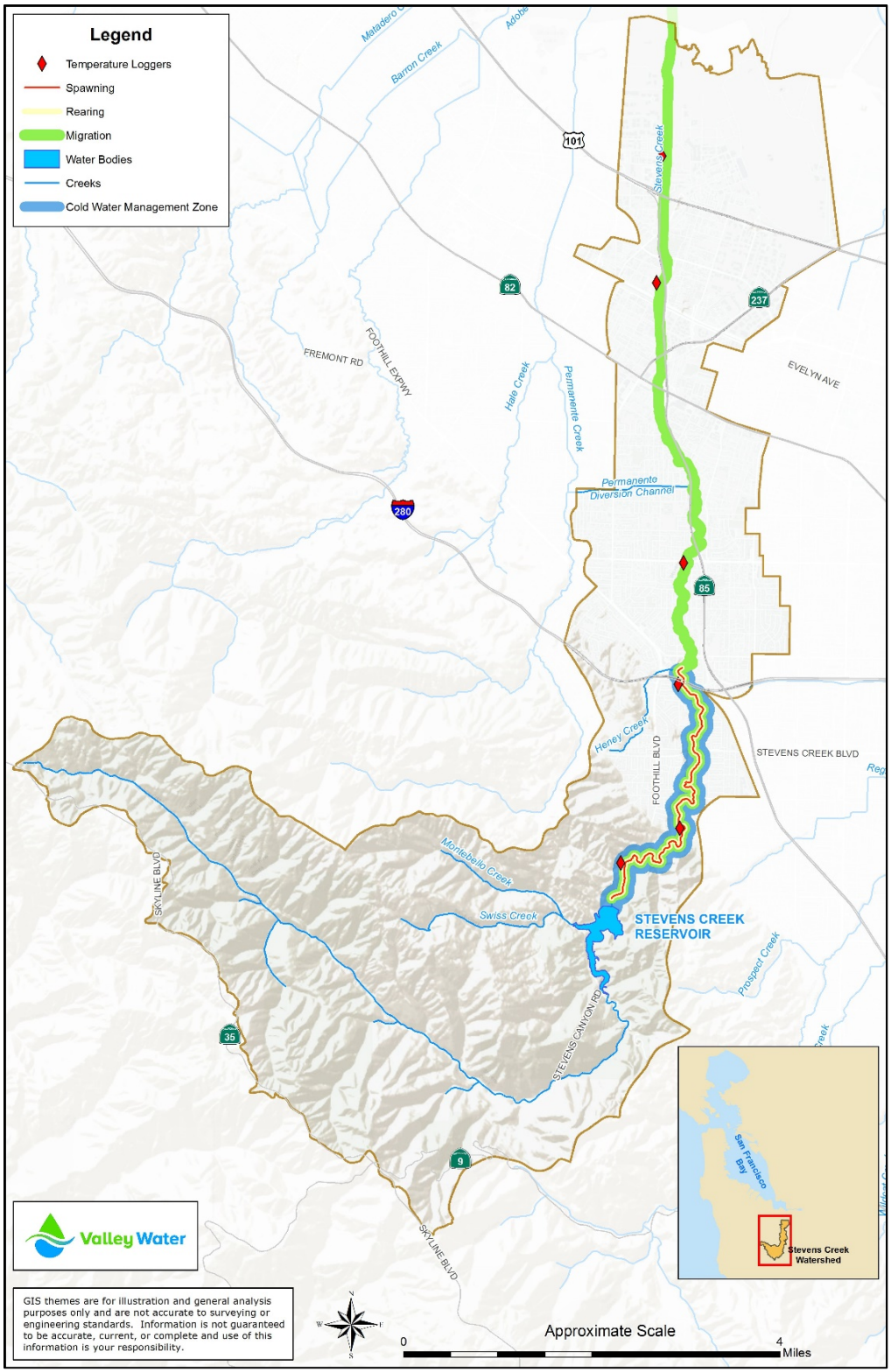


Figure 6-9. Location Map for Validation Monitoring in Guadalupe River Watershed

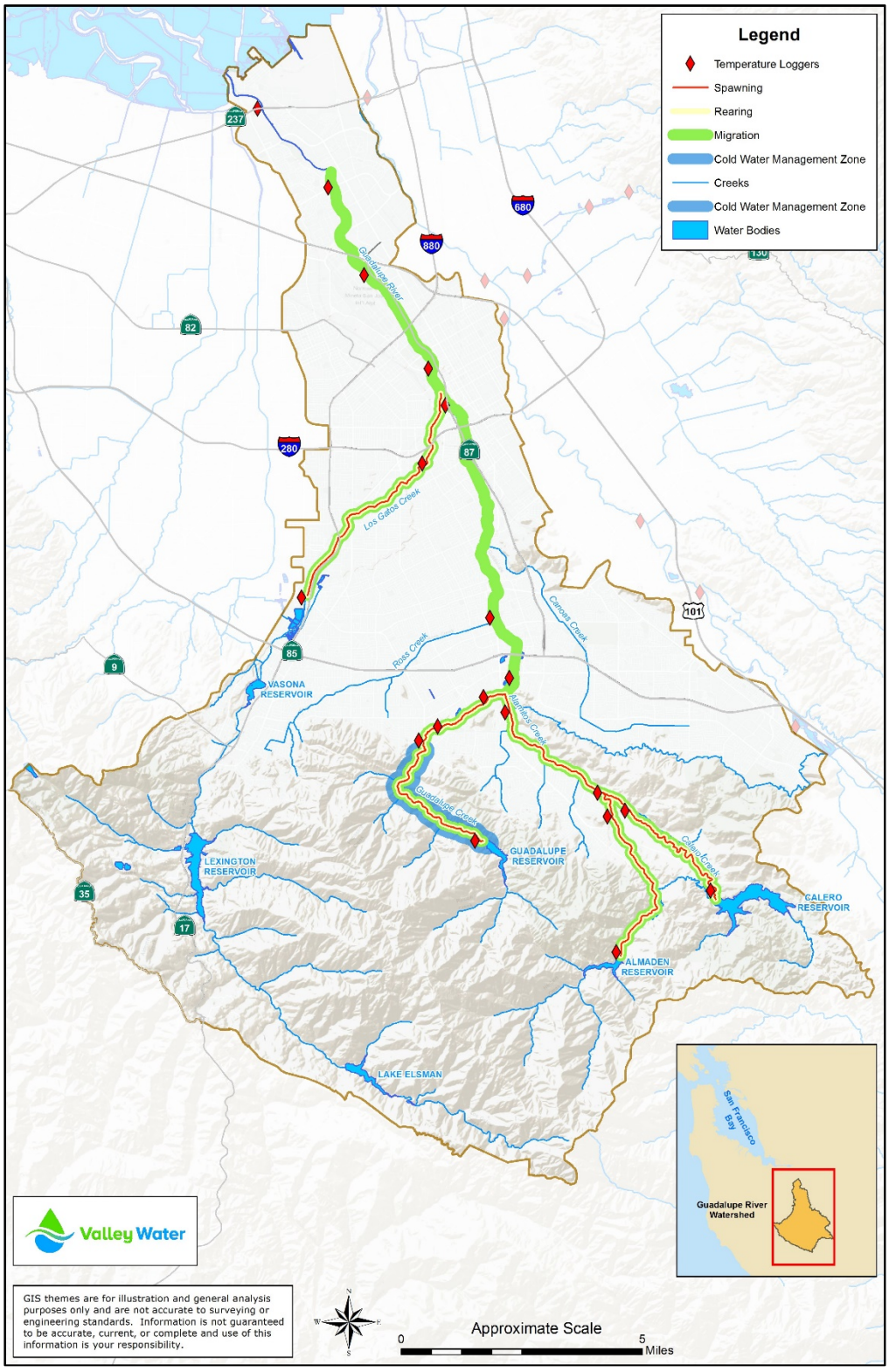
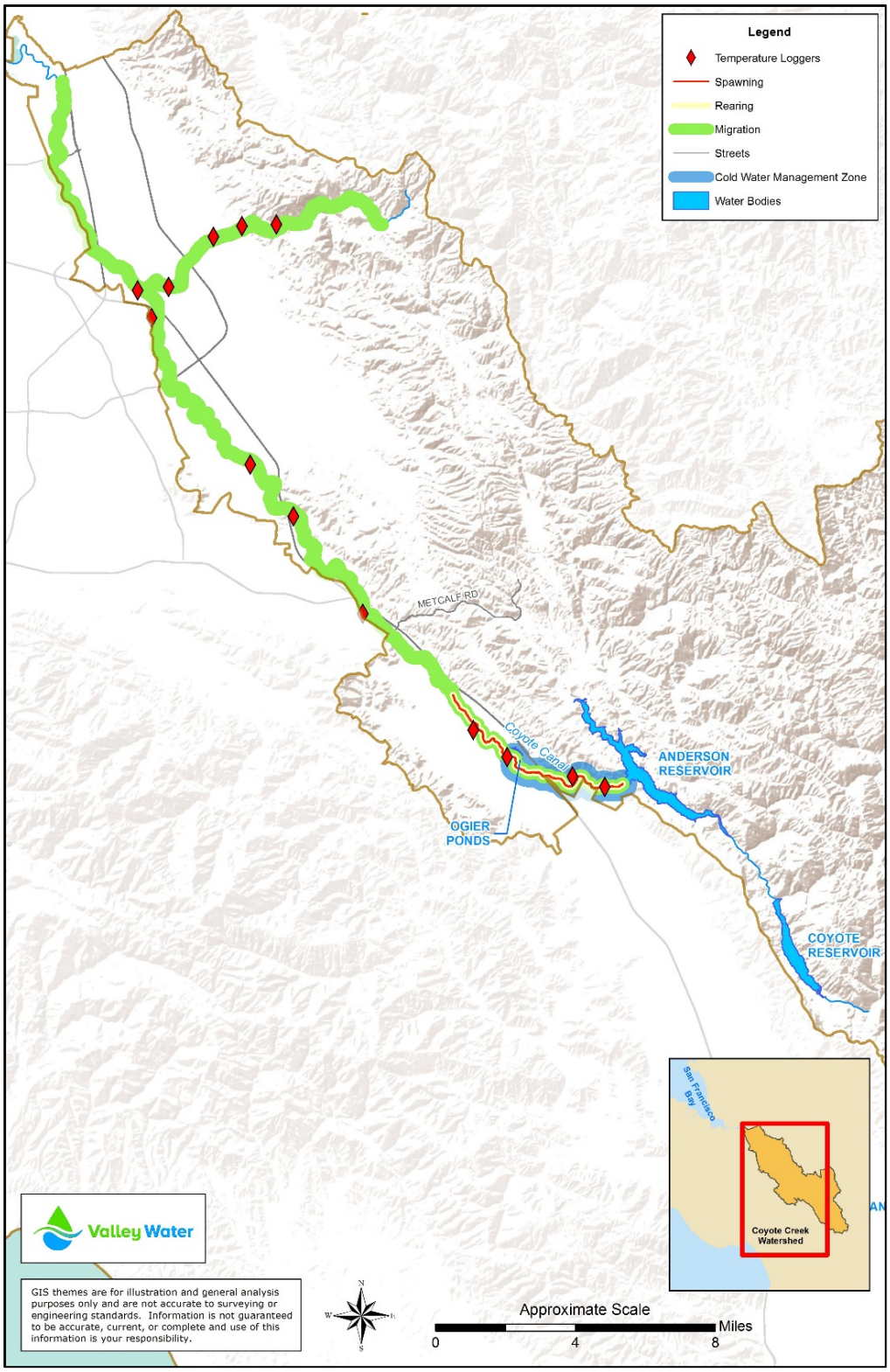


Figure 6-10. Location Map for Validation Monitoring in Coyote Creek Watershed



Based on site-specific characteristics and biological objectives for suitable habitat (HSI), parameters to be monitored may include depth, velocity, dissolved oxygen, turbidity, and water temperature (grab sample water quality measurements using hand-held meters during field surveys) at specific locations at different flow release conditions to provide suitable habitat conditions for different life stages of Chinook salmon and steelhead.

Water depth measurement will include passage depth at critical riffles. Water temperatures will be monitored using a network of self-contained water temperature monitoring units (Hobo tidbit or other similar units) year-round to assess the relationship between reservoir releases and actual water temperatures observed in the CWMZs and in other reaches of each creek. Additional criteria for spawning, egg incubation, juvenile rearing habitat, and salmonid passage will be tested. Measurable objectives have been identified in Table 6-5 to characterize habitat suitability and performance of restoration measures in supporting suitable habitat for each designated species and life stage of Chinook salmon and steelhead. Monitoring results will also help strengthen the fisheries, hydraulic, and water temperature modeling tools developed to support the FHRP. Examples of validation monitoring elements and linkages to the adaptive management process are summarized in Table 6-9.

Table 6-9. Examples of Validation Monitoring and Linkage to Adaptive Actions

Parameters	Measurable Objectives	Monitoring Method/Metrics	Timing/ Frequency	Potential Adaptive Actions
Water depth at critical riffles	Water depth downstream of the reservoirs	Water depth measurements at downstream transects	Measured once at winter baseflow and once at pulse flow at selected transect locations during the salmonid migration season	Propose refinements to rule curves, including modifying reservoir releases for adult Chinook salmon and steelhead upstream migration
Water temperatures and extent of CWMZs	Summer temperature targets; extent of CWMZ meeting targets	Water temperature loggers deployed in the CWMZs	Spring through fall (unattended logger hourly read)	Propose refinements to cold water pool management and/or extent of CWMZ
Fish passage conditions at priority barrier locations specified in Settlement Agreement	Water depth, velocity, and jump heights at fish passage structures constructed at specified locations	Site-specific surveys of water depth, water velocity, and jump height	Spring through fall (once a year at 5-year intervals)	Perform maintenance or repairs before wet season as needed
Instream substrate and habitat complexity	Restored areas substrate quality, LWD; validate enhanced habitat is suitable and functional as intended	Site-specific surveys of habitat, substrates	After flood event (channel forming flows) or every 5 years	Propose potential refinements, modifications, and expansions to habitat enhancement sites

6.5.2.1 Winter Baseflows for Salmonid Spawning

A key component of winter baseflows is to provide salmonid spawning habitat with suitable water depths, velocities, and substrates. Validation monitoring of spawning habitat suitability would be performed within each CWMZ at each of the prescribed winter baseflow (with the exception of the low storage curves described in Appendix E of the Settlement Agreement [see Appendix A *Settlement Agreement*]) following the implementation of the FHRP and then at 5-year intervals or the year following a channel forming flow event (such as bankfull flow).

The North Coast Instream Flow Policy (SWRCB 2007) methods will be used to confirm winter baseflows are providing suitable spawning habitat (Table 6-5). As part of validation monitoring, water depths and velocities will be measured in spawning areas within each CWMZ and correlated with instream flow measurements at the nearest stream gage, which would then be used as an indicator of sufficient spawning flow. In performing the analysis, one to two transects will be conducted in areas that best represent typical salmonid spawning habitat in the site after walking a length of stream and visually assessing geomorphic and flow conditions. Transects will be conducted in channel locations where spawning is expected to occur based on professional experience of Valley Water staff. Typically, transects will be conducted preferentially over the pool edge/riffle crest interface, representing classic salmonid spawning habitat. The number of transects will depend on the availability of spawning habitat within the length of each reach.

The minimum flow providing suitable spawning habitat conditions will be estimated for each transect based on water depth and velocity suitability criteria. Where two transects are analyzed, the one requiring the lowest minimum spawning flow will be used to represent the site. Instream flows providing suitable spawning conditions for each creek based on field measurements as part of validation monitoring will then be compared to the FAHCE rule curves. In the event that flows identified through field validation monitoring are inconsistent with a rule curve, further consideration will be given to potentially recommending modifications to the instream flow operations criteria as part of the adaptive management process.

The spawning habitat suitability criteria for steelhead use is a depth of 0.7 foot or greater, velocities within the range of 1.0 to 3.0 ft/sec, substrate embeddedness of 26% to 50% or less indicating acceptable spawning habitat quality, and suitable spawning substrate having an average diameter range of 0.5 to 2 inches. The depth criteria for suitable habitat for spawning Chinook salmon is 0.9 foot or greater, water velocity within the range from 1.0 to 3.0 ft/sec, and an average substrate diameter ranging from 0.4 to 3 inches. An area will be assessed to successfully support spawning if depth, velocity, and substrate are within the suitable ranges over an area sufficient to support redd creation (20 square feet or greater).

These measurable objectives will be evaluated once each 5 years or after channel forming flow events (bankfull flows) within the upstream reach characterized as salmonid spawning habitat (Figure 6-8 through Figure 6-10).

6.5.2.2 Pulse Flows for Salmonid Migration

Passage conditions suitable for both up- and downstream migration are essential for anadromous salmonids to successfully complete their lifecycle. Passage impediments such as instream structures or critical riffles are often a limiting factor in terms of providing access to suitable spawning and juvenile rearing habitat upstream within a watershed. The suitability of passage conditions during pulse flows was modeled using water depth at specific locations (such as critical riffle crests); therefore, field validation of the modeled pulse flow conditions will be measured directly at the three to five most critical riffles in each stream (identified POIs [critical riffle locations change from year to year depending on stream conditions]; Figure 6-8 through Figure 6-10), which limit passage in each stream downstream of the dam. Validation monitoring for flow-passage depth relationships at each of the critical riffles identified for use in this analysis would need to occur only once during the initial phase of program implementation.

Water depths will be measured at the prescribed winter baseflows and during pulse flow events at the critical POI's with results compared to the minimum required depths of 0.7 and 0.9 foot over 25% of the channel cross section for adult steelhead and Chinook salmon, respectively. The passage depth criterion for downstream migrating juvenile salmonids identified as a measurable objective is 0.4 foot of depth over 25% of the channel cross section. The instream flow providing suitable water depths to meet the passage criteria based on field measurements will be compared to the prescribed flow based on hydraulic modelling (Table 6-5). In the event that the instream flow providing suitable conditions for adult and/or juvenile salmonid passage varies between the measured and the modelled pulse flow magnitude at the identified critical riffle locations, potential alternatives will be evaluated as part of the adaptive management process.

6.5.2.3 Cold Water Management Zone Suitability for Juvenile Steelhead Rearing

Key components of summer rearing habitat for juvenile steelhead include suitable water depth, velocities, and temperatures to support summer rearing in each CWMZ. Figure 6-8 through Figure 6-10 depict the three CWMZs on Stevens Creek, Guadalupe Creek, and Coyote Creek. Water temperature management within each of these three CWMZs will be controlled through strategic reservoir releases that are managed based on measured cold-water storage in each reservoir. The Settlement Agreement prescribed water temperature criteria used to determine the volume of cold water storage in each reservoir in addition to the temperature criteria downstream at the end of each CWMZ used to determine habitat suitability for over summer juvenile steelhead rearing (Table 6-3).[2]

Between April 15 and April 30, if access to the reservoir is available, temperature profiles of each of the three reservoirs will be measured by taking sample profile measurements using a hand-held temperature meter and long cable probe by boat at incremental depths (typically 1-meter intervals) at the deepest part of the reservoir, near the dam. The volume of the cold water hypolimnion will be estimated by the vertical temperature measurements within the reservoir to identify the depth at which the cold water hypolimnion begins. This depth will then be multiplied by the known area-capacity of the reservoir to obtain the total cold-water volume. Where applicable, additional reservoir temperature profiles will be conducted on a monthly basis from June through October to improve cold water pool management. Reservoir releases will be adjusted to correspond with changes in the measured hypolimnetic volume. Valley Water will also measure instream flow and water temperatures downstream at the stream gage nearest the reservoir (Table 6-7), and stream temperatures downstream within the three CWMZs between May 1 and October 31. Measurable objectives for water temperatures supporting suitable juvenile rearing habitat in the CWMZs (Table 6-3) are less than 18°C within the CWMZs in Coyote and Guadalupe Creeks and an average daily temperature of less than 19°C, with a daily maximum temperature less than 22°C, in the Stevens Creek CWMZ (Table 6-3).

Results of the validation monitoring will be used to assess downstream water temperatures and the objectives for management of the CWMZs. Information will also be gained on the reservoir thermodynamics through the spring, summer, and fall months, and the effectiveness of the temperature management strategy in maintaining suitable juvenile rearing conditions throughout the period. In the event that water temperatures at the downstream end of the CWMZ cannot be managed to meet the temperature criteria, or cold water storage within the reservoir is exhausted prior to October 31, results of the validation monitoring program will be used to identify potential adaptive actions for achieving suitable summer rearing conditions for juvenile steelhead. Water temperatures and the geographic extent of the CWMZs are expected to vary within and among years in response to factors such as the temperature and volume of the cold water pool in

[2] Note that water temperatures and length of the cold water management zone downstream from the dam will vary within and among years based on factors such as the volume of cold water storage in each reservoir, air temperature, instream flow, wind, and other factors.

reservoir storage, instream flow rate, air temperature and other climatic conditions, and other factors, which will need to be taken into consideration when evaluating summer operations. Results of water temperature monitoring in the CWMZ will be documented in the annual report. Potential recommendations for refinements to the monitoring and management approach for summer water temperatures will be discussed by the AMT.

Water temperature loggers will be deployed at the upstream, midpoint, and downstream boundary of each of the designated CWMZs (Coyote, Guadalupe, and Stevens Creeks only) to gather data on the average daily water temperature. Water temperature will be monitored at an hourly frequency near the channel bottom. The CWMZ downstream extent identified in the Settlement Agreement will be based on average daily water temperatures (see Table 6-10).

Water temperatures will also be measured hourly at the release from each reservoir except Lexington Reservoir (starting location for all six reservoir release sites is located immediately downstream of each reservoir outlet) to assess temperature inflow to the channel throughout the May through October period.

Table 6-10. Stream Gages with Temperature Loggers

Monitoring Period	Creek	Gages No.	Location
May 1 – October 31	Coyote	5082	Mardone
May 1 – October 31	Guadalupe	5017	Guadalupe Creek at base of dam
May 1 – December 31	Stevens	5044	Stevens Creek at base of dam

For streams in the Guadalupe River system without CWMZs (Alamitos, Calero, and Los Gatos Creeks), summer flow releases to support steelhead rearing will be based on available reservoir storage and not dependent on water temperature.

Validation monitoring for non-flow measures based on field measurements is intended to confirm that the implemented habitat enhancements and passage impediment remediations were constructed as designed and function as intended to benefit anadromous salmonids (the enhanced habitat provides suitable water depths and velocities, cover, connectivity, and other measurable metrics of habitat suitability; passage impediments were remediated to have adequate water depths at instream flow rates prescribed by the cure curves). In the event that field measurements show that the habitat enhancement actions or passage remediation do not meet the measurable objectives for habitat suitability at typical instream flow levels (winter or summer baseflows, depending on intended habitat functions), results of the field monitoring will be used for evaluating adaptive actions.

6.5.2.4 Barrier Remediation Analysis

Fish passage analysis (CDFW methodology using criteria such as pool depth, jump height, upstream depth, water velocity, and other factors) will be conducted at passage impediments and barriers that have been removed or modified to confirm that the facility provides suitable conditions to pass migrating juvenile and adult salmonids at a range of flows expected to allow for migration (one time as built measurements following completion of passage remediation). For example, observations at a passage impediment may indicate that additional step pools would facilitate passage given the height of a barrier. The fish passage criteria will apply to both priority barriers owned by Valley Water and barriers owned by other parties. Anecdotal observations of salmonid passage and the occurrence of adult Chinook salmon and/or steelhead upstream of a modified barrier will also be used to assess performance.

Fish passage conditions in designated stream reaches (downstream of the regulating reservoir) will be inspected once per year before the rainy season and maintained to operate as designed (such as removing

accumulated sediment and debris). In the event that field inspections show a need for maintenance and modifications, the findings will be included in the annual report in the adaptive management process.

6.5.2.5 Gravel Augmentation

Gravel quality and quantity monitoring using substrate particle size measurements will be conducted at gravel augmentation sites at 5-year intervals or following channel forming flow events (such as bankfull flow) to verify the sites are functional for spawning (meet the spawning habitat measurable criteria) and to monitor the longevity of the augmented site (such as gravel scour and deposition). Surveys to measure quantity and embeddedness of augmented spawning gravels will begin following the first winter after gravel augmentation. Quantity and embeddedness of augmented spawning gravel will be characterized through habitat surveys. Length and width of suitable spawning habitat will be measured and recorded. Average percent embeddedness of suitable spawning-sized substrate will be determined for each habitat unit (within the active channel) based on selecting and sampling at least nine small cobbles (0.5 to 4.0 inches) and estimating the amount of stone buried in the sediment. These field measurements would be made only within the stream reaches characterized as suitable spawning habitat for salmonids (Figure 6-8 through Figure 6-10).

Cobble selection will be done through the step-toe method. Starting on the shoreline, a field technician will step across the channel and select the particle at the tip of the toe of the wader boot. This will continue across the channel towards the opposite bank, continuing to pick up particles, until the requisite number of measurements have been taken. Estimation of embeddedness is done by removing the cobble from the streambed and observing the line between the “shiny” buried portion and the duller exposed portion. Since algae and benthic macroinvertebrates colonize the substrate, the percentage of the substrate that is shiny (has little or no organic growth) provides an indicator of the degree of substrate embeddedness. The larger the proportion of the substrate that has a shiny surface, the greater the degree that the substrate has been embedded in sand and other fine sediment, and the lower the interstitial space.

Embeddedness will be recorded based on a visual estimate on a quartile scale (0–5%, 6–25%, 26–50%, 51–75%, 76-100%). The median value will be selected to represent the reach with an embeddedness estimate of 26–50% or less indicating acceptable spawning habitat quality. Anecdotal observations of spawning adult Chinook salmon and/or steelhead or redds within areas where gravel augmentation has occurred will also be used to assess performance. Routine habitat inspections will identify existing habitat that is suitable for spawning but has inadequate gravel quality or availability. Following spawning gravel augmentation, the site will be inspected at 5-year intervals or following channel forming flow events (such as bankfull flow) to determine habitat suitability as part of the AMP. In the event that gravel is determined to have been transported downstream by high flows or that gravel has become imbedded by fine sediment, for example, it could be evaluated in the adaptive management process.

6.5.2.6 Rearing Habitat within the Designated Watersheds

Habitat conditions determine the habitat suitability of a stream reach for various life stages of steelhead based, in part, on the distribution, abundance, and quality of mesohabitats (pool, riffle, and run), as well as physical habitat features such as water depth, velocity, substrate, riparian vegetation, and instream and overhead cover. Monitoring the status and trends of habitat conditions will include habitat inventory monitoring following consistent standard habitat survey methods (Flosi et al. 2010) as modified by Valley Water in 2016 . Valley Water surveyed habitat conditions within the watersheds in 2016, including habitat type, instream cover, substrate composition and embeddedness, bank composition, and canopy cover. The 2016 habitat inventory was subsequently used to estimate habitat that will be provided through the FHRP. Monitoring changes in habitat type and condition over time will support quantitative and qualitative analysis of changes in habitat quality and availability within the three watersheds as part of program implementation and performance evaluations.

Surveys of the condition of juvenile rearing habitat located in the CWMZs downstream of each reservoir includes 1) habitat surveys specifically focused on those areas within the Three Creeks where habitat enhancement has occurred (such as changes to channel form and addition of LWD, boulders, gravel, riparian planting, and so on); and 2) broader regional habitat surveys of approximately 10% habitats downstream of each reservoir available to juvenile salmonids for rearing (such as CWMZs) and migration (such as reservoir to the Bay). Habitat conditions and suitability for steelhead will be documented so that changes over time may be monitored. CDFW habitat inventory methodology will be followed. The two sets of habitat surveys are briefly discussed below.

Suitability of juvenile rearing habitat will be documented by mapping suitable rearing habitat area within the CWMZs of Coyote, Guadalupe, and Stevens Creeks (Figure 6-8 through Figure 6-10) where enhancements have occurred to improve habitat quality. Habitat mapping within the three designated CWMZs will be conducted at 5-year intervals or following channel forming flow events (such as bankfull flows). Methods of habitat mapping will be consistent with those adapted from the 2011 AMT Science Panel (Valley Water and H. T. Harvey and Associates 2011) used on Guadalupe Creek. A flow meter and wading rod will be used to measure depth and velocity at various locations within each CWMZ to determine the suitable area boundary. Measurements will be taken in 500-foot-long reaches adjacent to the juvenile rearing locations. Habitat mapping data will be delineated onto aerial photographs or a scaled map of the reach. The area of suitable habitat will then be calculated in a geographic information system. Mapping criteria for juvenile rearing habitat will include water depths greater than 0.5 foot but less than 5 feet; water velocity 0.1 to 2.8 ft/sec; proximity to cover less than 5 feet; and a minimum polygon area of 5 square feet. A portable hand-held water quality meter will be used to measure water temperature, dissolved oxygen, and turbidity (grab sample measurements) at each transect during each field survey. Valley Water biologists will determine flows that are safe for wading and appropriate for habitat mapping, and all measurements will be repeated at ±10% of that flow level for consistency. The total habitat area density (area/length) will be calculated for each mapped reach, and the weighted average habitat area density (square feet per 100 feet) calculated. Use of the weighted habitat area will correct for differences in survey lengths, for making comparisons among habitats surveyed within each CWMZ.

Habitat surveys of enhancement sites will also include standard photo point documentation of each enhanced habitat area looking up- and downstream. Gravel quality and embeddedness will be characterized using the methods described above for spawning habitat. Instream cover stability will be assessed by measuring Global Positioning System positions for LWD and boulders to determine if these habitat elements have been displaced downstream.

Summer juvenile steelhead rearing habitat mapping and water temperature monitoring results will be used to validate prescribed instream flow and temperature operations. Summer rearing operations will be adaptively managed based on results of reservoir storage, the estimated cold-water pool volume in each reservoir hypolimnion, water temperature warming rates downstream, and habitat suitability based on water depth and velocity.

Routine regional habitat inspections throughout each of the designated watersheds (Figure 6-8 through Figure 6-10) will be conducted at 10-year intervals (prior to the completion of each phase of the FAHCE program) to identify existing habitat that is suitable for juvenile rearing but has inadequate habitat diversity and complexity (such as velocity refugia, overhead and in-channel cover, passage barriers or impediments, and so on). The regional surveys will include reaches extending downstream from each reservoir to the Bay. CDFW has determined that subsampling of 10% of the length of a stream reach is sufficient to accurately describe stream habitat. Selected stream sections will be subsampled following CDFW methods in Appendix O of the *Stream Habitat Restoration Manual*. Data will be collected at Level 4, which classifies habitat units into 24 specific habitat types within the riffle, flatwater, and pool categories. Photographs will be taken of each individual habitat unit surveyed, facing the upstream and downstream direction, and will be catalogued.

6.5.3 Long-term Trend Monitoring

Long-term trend monitoring will collect data for evaluating the biological response of juvenile and adult salmonids (see Table 6-11). Fish monitoring to support long term trend analysis will be conducted in the locations shown in Figure 6-11 through Figure 6-13. Again, salmonid response is not used as a direct indicator of the performance of the fish habitat restoration program (such as a change in adult abundance of steelhead returning to the watersheds) because there are a large number of factors outside of the control of the Valley Water.

Table 6-11. Long-term Trend Monitoring

Parameters	Analysis	Monitoring Method/Tools	Timing	Reporting
Adult salmonid relative abundance	Occurrence and trend analysis	Vaki Riverwatcher/PIT tag detectors at downstream locations	Fall through winter (continuous)	10-years trend data (fish community characteristics, fish species composition, relative abundance, size distribution, and condition) as available input to inform adaptive management decisions
Juvenile steelhead density and condition	Occurrence, density, and size distribution	Index reach electrofishing surveys, steelhead collected will be visually inspected to assess juvenile fish conditions in addition to length-weight analysis of steelhead	Fall	
Juvenile steelhead migration	Occurrence at PIT antenna stations	Detect PIT tagged fish	Winter through spring	
Steelhead population genetics	Population diversity and genetic markers for anadromy	Tissue sampling during electrofishing and analyzing genetic markers for anadromy when a sufficient sample size has been collected	Fall	
Fish species composition	Baseline percentage of non-native species	Index Reach Electrofishing[a] surveys for species composition, relative abundance, and fish density	Fall	

[a] Index Reaches are specific locations with habitat characteristics representative of the surrounding habitats where electrofishing is conducted repeatedly over a series of years

Trends in the population dynamics of the target species and their biological responses and geographic distribution are, however, useful qualitative indicators of habitat functions within the watersheds. Long-term trend monitoring includes consideration of a variety of factors, including adult salmonid abundance, spatial structure, life history diversity, genetic diversity, productivity (young-of-the-year and yearling steelhead abundance), individual condition, fish community (species composition and relative abundance) monitoring, spatial and migratory analysis of juvenile steelhead, and habitat monitoring. These elements of the adaptive management monitoring effort are briefly discussed below.

The Settlement Agreement recognized that Valley Water "…. is not responsible under this Agreement for other environmental conditions that may limit the population or distribution of these fisheries." Therefore, there are no specific measurable objectives associated with long-term trend monitoring. Instead, this monitoring will be used to complement and inform the compliance and validation monitoring efforts, and is intended to help answer the following questions:

- Are salmonids migrating during the prescribed pulse flow events?
- Are winter baseflows providing suitable habitat conditions for adult salmonid spawning as reflected in production of young-of-the-year?
- Is there a long-term trend with respect to timing of upstream migration and outmigration?

- Are juvenile steelhead utilizing the CWMZs for summer rearing?
- Are steelhead utilizing rearing habitat enhancement features?
- What are the status and trends of native fish abundance and composition over time?

Improving the quality and availability of suitable habitat for salmonid spawning and juvenile rearing within the Three Creeks watersheds as outlined in the Settlement Agreement is expected to contribute to increased productivity, health, condition, and survival of salmonids, resulting in increased abundance and resilience to adverse environmental conditions (such as greater resilience to periodic drought conditions). Long-term trend biological monitoring of the salmonid population and the overall aquatic community is designed to inform the salmonid population, broader species composition, and relative abundance of the fish community response to the FAHCE habitat restoration measures.

The monitoring program includes permitting for sampling activities. For example, a programmatic sampling permit is needed from NMFS in support of incidental take authorization for steelhead under Section 10(a)1(a) or Section 4(d) of the ESA and a Scientific Collection Permit by CDFW. Typically, the permit includes a sampling plan that outlines the objectives of each monitoring element; describes the basic experimental design; identifies sampling locations; and specifies sampling frequency, sampling methods and protocols, and sample processing (examples from Valley Water's Fisheries Habitat Availability Estimation Methodology are included in Appendix B *Documentation of Completed Settlement Agreement Obligations*). The sampling plan also describes data analysis and hypothesis testing. The permit also estimates the level of potential incidental take of listed fish species and a description of measures designed to minimize and avoid adverse effects on aquatic resources. The annual report will include or cross-reference the sampling activity compliance report.

Selection of monitoring locations within each of the Three Creeks was based on results of past and current fishery monitoring by Valley Water, site-specific channel and habitat conditions, compatibility of channel conditions with specific monitoring equipment (such as PIT tag detectors, electrofishing, and Vaki Riverwatcher), and access. Locations for long-term trend monitoring are shown in Figure 6-11 through Figure 6-13.

6.5.3.1 Adult Abundance Index Monitoring

The fish habitat restoration program includes adult salmonid monitoring using fixed station (Vaki Riverwatcher fish counters) monitoring in each of the three watersheds to provide an abundance index of adult steelhead and Chinook salmon migrating upstream in each watershed (migration corridors for each watersheds). Locations of the fish counters are shown in Figure 6-11 through Figure 6-13.

Figure 6-11. Location Map for Long-term Trend Monitoring in Stevens Creek Watershed

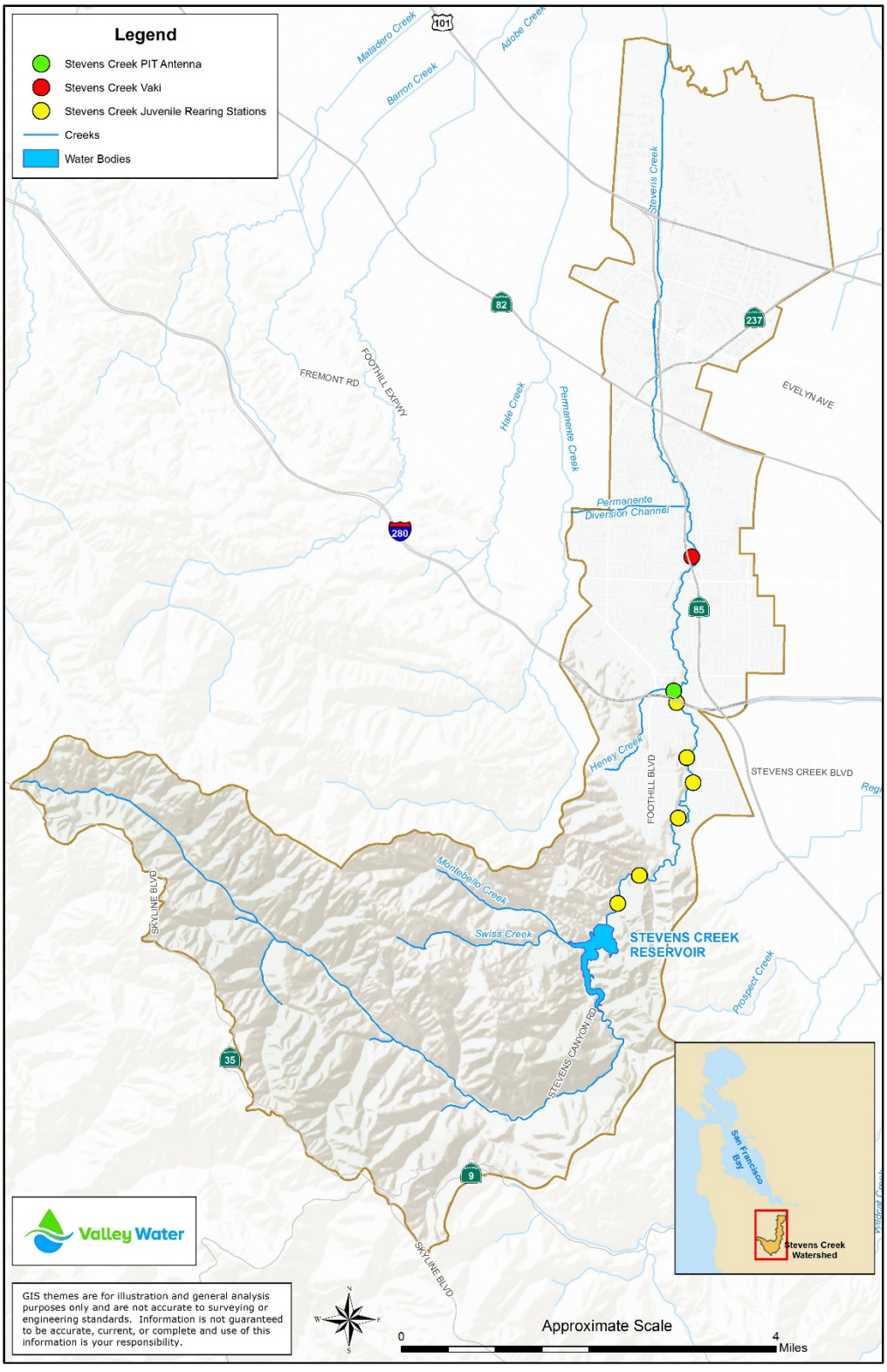


Figure 6-12. Location Map for Long-term Trend Monitoring in Guadalupe River Watershed

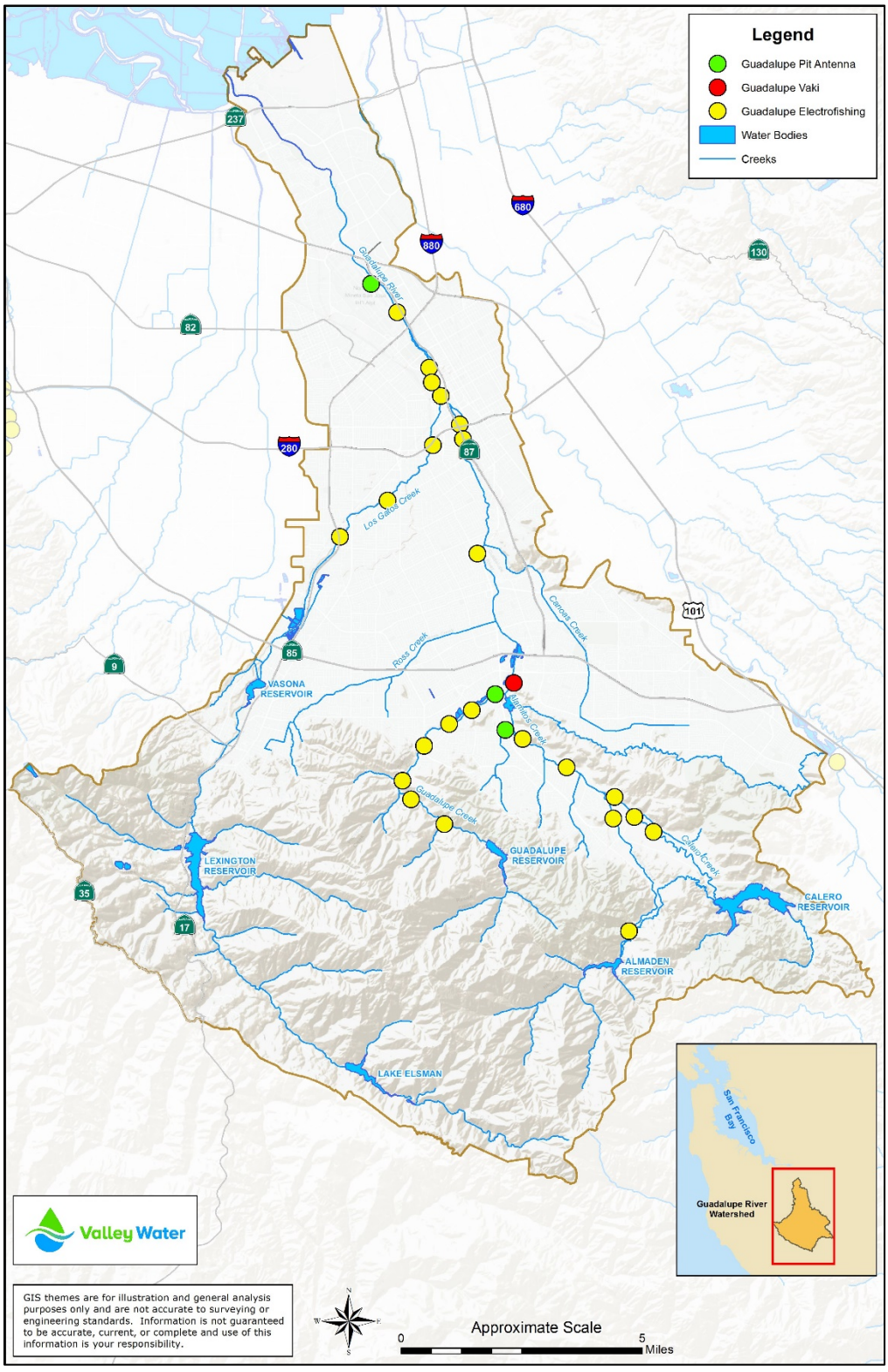
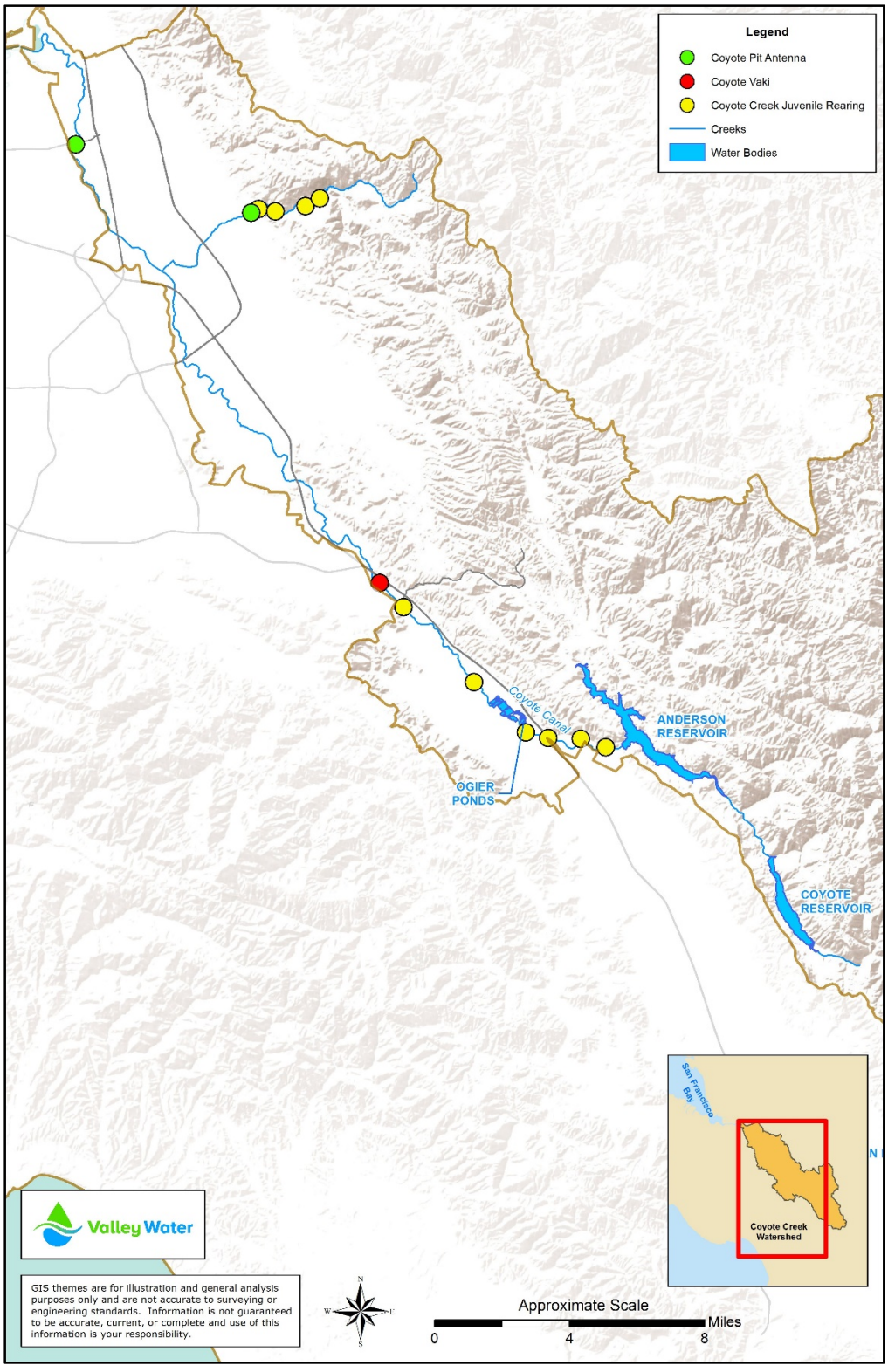


Figure 6-13. Location Map for Long-term Trend Monitoring in Coyote Creek Watershed



The Vaki fish counters would be deployed during October through May to cover the adult salmonid migration season each year for a 10-year period (for Phase 1 implementation) and will then be reassessed. Existing infrastructure like fish ladders, pilings, streamflow gages, and other existing structures would be used for attachment of the Vaki Riverwatcher and guidance weirs when possible to avoid the need for installing additional instream structures. Valley Water will acquire all necessary regulatory approvals to install the devices and any related infrastructure.

Data gathered will provide information needed to develop an index of adult salmonid escapement to each watershed in a given year, assess trends in adult abundance over time, and develop temporal species-specific immigration trends (such as seasonal migration patterns, response to pulse flows, and so on). A complete census of adult Chinook salmon and steelhead migrating upstream in each watershed is not possible, however, for the following reasons: not all fish will migrate through the Vaki system as some will spawn downstream of the counter or venture into tributaries that are downstream, like Upper Penitencia Creek, Los Gatos Creek, and others; there may be periods of missing data due to high flows and turbidity; there may be occasional malfunctions of the Vaki system, including loss of power during high cloud cover periods or power outages; and there may be occasional inability to accurately identify fish species based on video and silhouette quality.

Flow and water temperature monitoring described above for validation monitoring will also be related to fish passage data (such as results of Vaki Riverwatcher observation) where possible to identify potential relationships between pulse flow events, winter baseflows, and fish migration. Estimates of the number of returning adult Chinook salmon and steelhead over a number of years may be used as an index to estimate cohort replacement rates and other metrics. Multi-year datasets will enable a status and trends analysis for both adult steelhead and Chinook salmon. Annually, the number of adult steelhead and Chinook salmon passing the Vaki, timing of migrations, and associated flow and water temperature conditions will be included in the annual reports.

Results of the Vaki Riverwatcher adult salmonid monitoring will be used to assess population trends over the first 10-year phase of the program, and will then be reassessed by Valley Water and the AMT. Long-term trend monitoring of adult salmonid returns will be used to estimate the trend in cohort replacement, assuming a sufficient number of adult salmonids are detected to support analysis, with the goal of achieving a long-term average annual cohort replacement rate greater than 1.0 (long-term trend of increasing adult abundance) during the first 10-year phase of the program.

6.5.3.2 Spatial Structure, Diversity, and Productivity Monitoring

To determine the spatial structure, diversity, and productivity of steelhead populations, electrofishing surveys will provide data to assess fall juvenile steelhead rearing conditions and successful summer rearing, and will inform individual, population, and community level analyses.

Water quality in the watersheds poses health and safety challenges due to mercury, coliform bacteria, and other contaminants; the prevalence of homeless encampments; and urban contaminants. Therefore, due to health and safety concerns associated with snorkel surveys, backpack electrofishing will be used as the primary method to assess distribution, species composition, and relative fish abundance and productivity within watersheds.

The methods and design of the juvenile steelhead rearing monitoring effort will be based on the sampling conducted by Valley Water for various projects as described in existing monitoring plans for each watershed. Juvenile rearing monitoring for the Downtown Guadalupe Project has yielded valuable information regarding the distribution and population dynamics of salmonids in the Guadalupe Creek and Guadalupe River over the past 15 years (Valley Water and Stillwater Sciences 2018). Similarly, CDFW and Dr. Jerry Smith have used index reach electrofishing to monitor steelhead populations in Coyote and Stevens Creeks (Leicester and Smith 2016) through 2020. Valley Water has monitored Alamitos, Calero,

Los Gatos, and Upper Penitencia Creeks from 2018 to 2020. In 2020, Valley Water implemented the first year of monitoring on Stevens Creek.

Electrofishing surveys will be conducted annually in fall to determine relative abundance, size distribution, and visual condition of enhancement sites by juvenile steelhead and other native fish when compared to adjacent "control" sites where habitat enhancement measures had not been implemented. Success will be measured by an increase in suitable habitat and occupancy by juvenile steelhead post implementation. Electrofishing surveys will be conducted at approximately 30 index reaches within the tributaries and mainstem channels of the Guadalupe River, Coyote Creek, and Stevens Creek watersheds in fall after summer flow where water temperature and habitat conditions are most limiting. The general locations of the sampling reaches are shown in Figure 6-12 and Figure 6-13. Index reaches would be composed of two different habitat types (riffle and run) approximately 135 feet in length, isolated with up- and downstream block nets, and sampled using backpack electrofishers using a triple-pass depletion methodology. Electrofishing will follow standard NMFS survey protocols (NMFS 2000).

A handheld water quality meter will be used to measure water temperature, dissolved oxygen, conductivity, and turbidity (grab sample) during electrofishing in each index reach. All captured fish will be identified, enumerated, measured for length and weight, and assessed for visual condition. Subsampling for fish length and weight may occur for non-salmonid species if more than 25 individuals are collected in a sample to reduce handling stress during sample processing. Standard methods will be used to calculate species-specific abundance estimates and 95% confidence intervals, by sampling reach, using data from the depletion surveys.

Data analysis will assess the occurrence and distribution for each species to establish spatial structure within each watershed. In addition, specifically for steelhead, spatial structure and migration will be further analyzed by using PIT tag technology to track movements of migrating juvenile steelhead.

To further define diversity and productivity, analyses will be conducted at the individual, population, and community levels discussed below.

Individual Level – Steelhead

The individual condition of steelhead sampled during electrofishing surveys in the watersheds will be assessed by collecting weight and length data from all steelhead captured during electrofishing surveys. Relative weight will be calculated using a standard formula and will be used to assess individual condition (such as plumpness). Physical abnormalities of sampled juvenile steelhead will be recorded to calculate a proportion of fish with physical abnormalities, fungal infection, or external evidence of disease in each watershed.

Population Level – Steelhead

At the population level, indices of life history diversity, productivity, and relative abundance will be assessed using the following tools:

- Inter-annual and long-term changes in multiple age classes represented in the population will be used as an indicator of life history diversity.
- The relative frequency and abundance of young-of-the-year steelhead will be assessed as an indicator of successful reproduction by cohort and watershed.
- To define age class structure, length frequency analyses for steelhead and resident trout in each 10-millimeter fork-length category will be plotted to assess size distribution characteristics.
- Genetic diversity (heterozygosity) will be analyzed by collecting a small tissue clip from steelhead/trout during sampling in some years. Genetic diversity will be compared to previous data (Garza and Pearce 2008a) to measure trends in genetic diversity through time. A steady or

increasing trend in genetic heterozygosity would indicate protection of genetic diversity. This measure would be compared with NMFS recovery plan guidelines (Lindley et al. 2007) for maintaining sufficient genetic robustness to avoid inbreeding depression and allow for adaptation.

- Juvenile steelhead/trout densities will be used to evaluate trends in relative abundance by reach and habitat type.

The geographic distribution of juvenile steelhead and resident rainbow trout will be used to assess occurrence in areas where habitat enhancement actions had been implemented when compared to adjacent "control" areas when habitat enhancement measures had not been implemented.

Community Level

Based on results of the electrofishing surveys, characteristics of the fish community inhabiting each index reach surveyed within each watershed would be assessed based on:

- Species abundance and size class distribution of the fish community;
- Proportion of native fish species relative to non-native species;
- Standard index of species diversity;
- Standard index of species dominance; and
- Standard index of species evenness.

6.5.3.3 Spatial and Migratory Analysis of Juvenile Steelhead

PIT tags are dormant tags with a unique identification number that can be implanted in a fish. The tag is detected when a tagged fish swims into a magnetic field generated by a PIT detection antenna. The PIT tag system provides information on migration timing and potentially information on juvenile survival and the proportion of the steelhead population that are anadromous versus resident.

Steelhead/rainbow trout captured during the electrofishing surveys with a fork length of 65 millimeters or greater will receive a PIT tag. Once tagged, movements of the individuals may be recorded as they pass over an array of PIT receivers (Bond et al. 2008). PIT tag detector arrays are proposed to be deployed in each of the three watersheds as part of the FAHCE monitoring program. The arrays would detect and record the downstream migration of individual steelhead as they pass through the lower reaches of each watershed.

PIT tag detections will provide data on the seasonal migration patterns of juvenile steelhead and how migration varies in response to environmental factors such as baseflows, seasonal pulse flows, and water temperatures.

Since PIT tags remain active throughout the life of a steelhead, detection of returning adult steelhead will also provide information on smolt-to-adult survival, juvenile rearing conditions that may influence growth and subsequent adult returns, adult migration timing and corresponding instream flows and water temperatures, straying among the watersheds, and the relative numbers of returning adult steelhead to each watershed each year.

The ability of the PIT tag effort to provide robust information on steelhead behavior and population dynamics will depend, in large part, on the number of juveniles that can be collected and tagged each year (sample size) and the ability to subsequently detect tagged juvenile and adult steelhead within each watershed.

Results of the tagging and monitoring will be compiled and drafted by Valley Water and reviewed by the full AMT each year. Refinements or modifications to the tagging and detection methods may be employed as part of the adaptive management process.

6.6 Adaptive Management Team

FAHCE participants, including state and federal resource agency staff, are committed to the long-term monitoring and performance reviews of the plan. As the AMT, they will assess each phase for performance in maximizing the quality and availability of salmonid habitat as directed by the Settlement Agreement. The AMT was convened in October 2020 and initiated the discussions on its composition, along with rules and procedures.

Settlement Agreement § 7.1 stipulated Valley Water to administer and staff an AMT to implement restoration measures "in an adaptive manner to effectively mitigate any adverse impacts on the steelhead trout and Chinook salmon fisheries and their habitat, resulting from SCVWD's water supply facilities and operations." This section further outlines AMT composition, responsibilities, annual meetings, the decision-making process, as well as what is to be included in the annual report, which serves as the basis for AMT's review, input, and adaptive management decision making process.

6.6.1 Composition

Per the Settlement Agreement, the AMT will comprise a single member from each current Initialing Party. Each Initialing Party will appoint a single technical representative to participate in AMT meetings and be responsible for ensuring its technical representative has the requisite qualifications to provide meaningful feedback during these meetings. In October 2020, Valley Water convened the first AMT meeting, and the Initialing Parties represented on the AMT included:

- Santa Clara Valley Water District
- United States Fish and Wildlife Service
- National Marine Fisheries Service
- California Department of Fish and Wildlife
- Trout Unlimited
- Pacific Coast Federation of Fishermen's Associations
- California Trout, Inc.
- Northern California Council of Federation of Fly Fishers

Membership may be open to other interested parties as outlined in Settlement Agreement § 7.2 (see Appendix A *Settlement Agreement*), with the consent of all Initialing Parties. Written application is required, and the applicant will need to demonstrate:

- commitment to implement the Settlement Agreement;
- willingness to dedicate the time and other resources necessary for effective participation in the Adaptive Management Program; and
- ability to add value to the existing membership.

6.6.2 Responsibilities

AMT members will review all of the plans, studies, reports, and other measures required by the Settlement Agreement and attempt to reach consensus (see Section 6.7.3 *Dispute Resolution Process* for a discussion of the process) for making decisions about adaptive management. Responsibilities include monitoring the implementation of the Settlement Agreement, recommending changes to restoration measures/actions, and identification of potential adaptive measures/actions for the achievement of the Settlement Agreement's Overall Management Objective. To build trust among members of the AMT, consistent participation by each person appointed to the AMT by each Initialing Party is expected. Each Initialing Party will minimize its use of alternative staff to attend AMT meetings. At each AMT meeting, each participant must be prepared and

empowered to act on behalf of the Initialing Party they represent for prompt and effective decision making that is within the scope of the AMP.

Since October 2020, Valley Water has been working with the Initialing Parties on a draft AMT charter detailing the rules and procedures for the AMT. The charter outlined the following explicit or implicit responsibilities for AMT members:

- effectively participating in all AMT meetings (including site visits);
- contributing to discussions; and
- coordinating internal input from the Initialing Party each represents.

Valley Water would designate a staff member to serve as the AMT chair, who will be responsible for:

- providing adequate staff resources to support AMT meetings, including preparing agenda; drafting meeting notes to document key points of discussion, agreements and disagreements, and action items; and distributing meetings notes for AMT's review and input prior to finalization;
- drafting and refining the AMT charter that provides details on rules and procedures for the AMT, as needed;
- handling meeting logistics, including drafting meeting agendas, facilitating meetings, and compiling meeting notes;
- drafting annual reports that include 1) actions taken pursuant to the Settlement Agreement, 2) monitoring results, and 3) plans for the subsequent year, to the extent known;
- finalizing annual reports after incorporating comments;
- coordinating and seeking approval for items needing Valley Water Board decisions; and
- maintaining communication, including distributing annual reports, meeting notes, and documentation on dispute resolution among the AMT.

In addition, the AMT would be responsible for:

- providing comments on draft documents, including the draft AMT charter and annual reports;
- coordinating with other adaptive programs in the same watershed, as appropriate;
- publishing and distributing the annual reports;
- collaborating with Valley Water in meetings; and
- following the established process when a dispute arises.

As needed, the AMT may provide input to refine existing analytic tools or identify new analytical tools after Valley Water applies data collected and analyses completed through the annual reporting process.

The AMT will also coordinate with other existing adaptive management groups to minimize overlaps and report FAHCE-related restoration measures consistently. As appropriate, Valley Water could consolidate and/or streamline the interactions of the various existing adaptive management processes when supported by respective participating agencies. For example, there is a meet and confer process under the existing LSAAs, which typically happens in spring for discussing the spring pulse releases to facilitate juvenile salmonid outmigration. Valley Water plans to coordinate with regulatory and resource agencies through the AMT to ensure consistency with the rule curves and other operational requirements presented in the Settlement Agreement and avoid duplicative or conflicting operational guidance.

6.6.3 Meetings

The purposes of the annual AMT meeting are to:

- review, discuss, and provide input on the recommendations in the draft annual report;

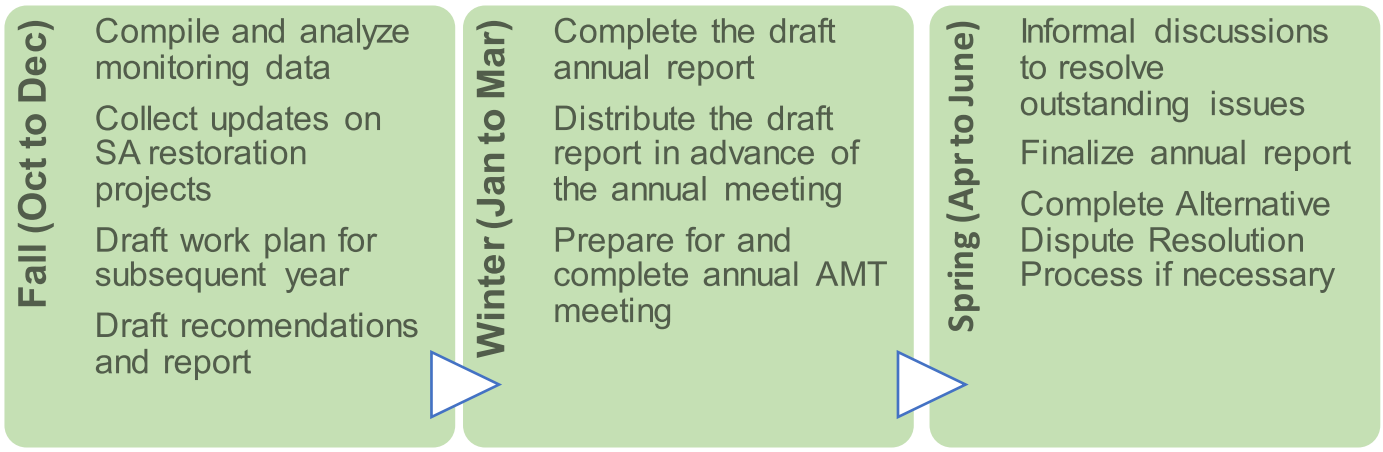
- discuss any adaptive management issues identified in the report that need the AMT's input; discussions may be triggered by a wide range of factors and events identified in the report such as needs to modify program actions or schedules based on hydrologic conditions such as flooding or drought conditions, needs to refine adaptive actions based on cold water pool within a reservoir, emergency operations, results of monitoring or modifications to monitoring activities, unexpected levels of incidental take of listed species, Valley Water's water supply operations schedules and constraints, program priorities and budget allocations, and other factors that may arise during the implementation of the program;
- identify members to participate in discussions to resolve any disputes (all members of the AMT can participate in the dispute resolution process regardless of the issue) consistent with the conflict resolution process as outlined in Settlement Agreement § 9; and
- finalize the annual report and 10-year synthesis report, and provide documentation of any unresolved conflicts following the process as outlined in the Settlement Agreement.

The Valley Water team will compile each draft annual report for AMT's review and comment. The draft annual report will be based on water years (October 1 through September 30) and be drafted during the last quarter of each calendar year. To ensure adequate time necessary for the Valley Water team to complete the draft report and ensure a full month for AMT's review and comment before the annual meeting, the AMT annual meeting will be scheduled the following March. It is expected that all AMT members will come prepared for the meeting, and will have provided their comments on the draft annual report in advance of the meeting.

Valley Water anticipates there will be interaction with members of the AMT throughout the year as issues or needs arise. Through these interactions, Valley Water may gain additional insights for drafting the annual report (including AMT review and comment on flow and non-flow measure implementation and interpretation of monitoring results), and as needed, could reach out to members of the AMT for clarifications. Valley Water intends to distribute the draft annual report a month in advance of the annual meeting to encourage AMT members to review and comment, and to allow Valley Water to build an agenda for the annual meeting focusing on consensus building for issues raised in AMT's comments.

The approximate annual schedule for AMT activities, along with the dispute resolution process, are depicted in Figure 6-14.

Figure 6-14. Annual Schedule for Reporting



6.6.4 Annual Report

A key work element of the AMT is to provide input on findings and recommendations contained in the annual report, as required by Settlement Agreement § 7.5. A draft of the annual report will be provided to the AMT for review and comment by the first quarter of the following year. As shown in Figure 6-15, the report would discuss program status in meeting the measurable objectives, discuss how flow releases were executed each year, provide monitoring results, specify the disposition of restoration projects identified in the Settlement Agreement (such as geomorphic channel restoration), discuss water use and financial expenditures associated with program implementation, and document AMP expenditures and Phase 1 funds remaining.

Figure 6-15. Elements of the Annual Report

Flow Releases	Montoring Results	SA Restoration Projects	Cost	Plan for Next Year
• release location • release rate • release duration • release frequency • release time • compliance with FAHCE rule curves • compliance with prescribed ramping rates • pulse flow operations	• habitat monitoring data • data analysis (including progress towards measureable objectives) • trend analysis, when adequate data is collected	• implemention status • update on completion schedule	• replacement value for water used in flow releases • monitoring cost • costs for non-flow restoration measures • AMT support cost • capital and maintenance costs for habitat enhancement actions	• program elements • recommended changes (including adaptive measures; process improvements; refinements to analytical tools and/or monitoring approach; • collaboration needs; • available funding

The annual report will also include a work plan for the subsequent year and discussion of any adaptive management recommendations for consideration by the AMT. The work plan will include actions to be continued, recommended changes to actions contained in the Settlement Agreement or process improvements needed for effectiveness and efficiency (including updates to the AMT charter), and responses to results of trend analysis as appropriate and for adaptive management decision-making.

The annual report will also include an accounting of annual expenditures along with cumulative expenditures by Valley Water. Settlement Agreement Appendices C and D included guidelines and protocols for calculating annual cost accounting for program expenditures in addition to monitoring and reporting. The accounting includes consideration of costs associated with:

- capital improvement projects (such as habitat enhancement, passage barrier remediation, and so on);
- lost water supply for groundwater recharge and use;
- research and environmental monitoring (including equipment and tools); and
- restoration measures implemented by Valley Water prior to the effective date of program implementation.

The report could also include information about grants or other funds applied or obtained for implementing non-flow measures that would benefit aquatic habitat.

6.6.5 Trend Analysis and Reporting

As stated in Settlement Agreement § 7.3(C), following each 10-year phase of program implementation, the AMT would:

> …evaluate the performance of the entire program in maximizing habitat quality and availability for steelhead and (Chinook) salmon within the framework of this (Settlement) Agreement. The assessment will also evaluate the performance of the program at each phase in reducing or eliminating limiting factors affecting various life stages of steelhead and (Chinook) salmon directly attributable to the District facilities and operations.

As such, at Years 10, 20, and 30 after the AMT formation (if Phases 2 and 3 are in fact necessary), Valley Water will include trend analyses from the monitoring data to provide a program synthesis report and more comprehensive evaluation of program effectiveness and performance. The report will include recommendations for restoration measures to be implemented in the subsequent 10-year phase if necessary, and will recommend refinements to the program for review and comment by the AMT before finalization and public distribution.

6.7 Decision Making Process

Adaptive management cannot be implemented without an effective decision-making structure that completes the loop between information development and the use of that information in decision-making. This section discusses key drivers for adaptive actions, and the consensus building or dispute resolution processes for responding to these key drivers.

6.7.1 Key Drivers for Adaptive Actions

Due to the degree of uncertainty and natural variability associated with ecosystems, and their responses to restoration measures, Valley Water plans to implement the measures specified in the FHRP in an adaptive manner to effectively address the measurable objectives and minimize adverse impacts on other resources (such as water supply, groundwater levels, public health and safety, recreation, wildlife, and so on). Identifying, selecting, and implementing adaptive management actions will play an important role in addressing measures that are not meeting and complying with measurable objectives, the restoration measures completed are not functioning as intended (such as not providing the habitat suitability indices, or functions predicted from earlier modeling and field studies) and/or are causing harm to other resources.

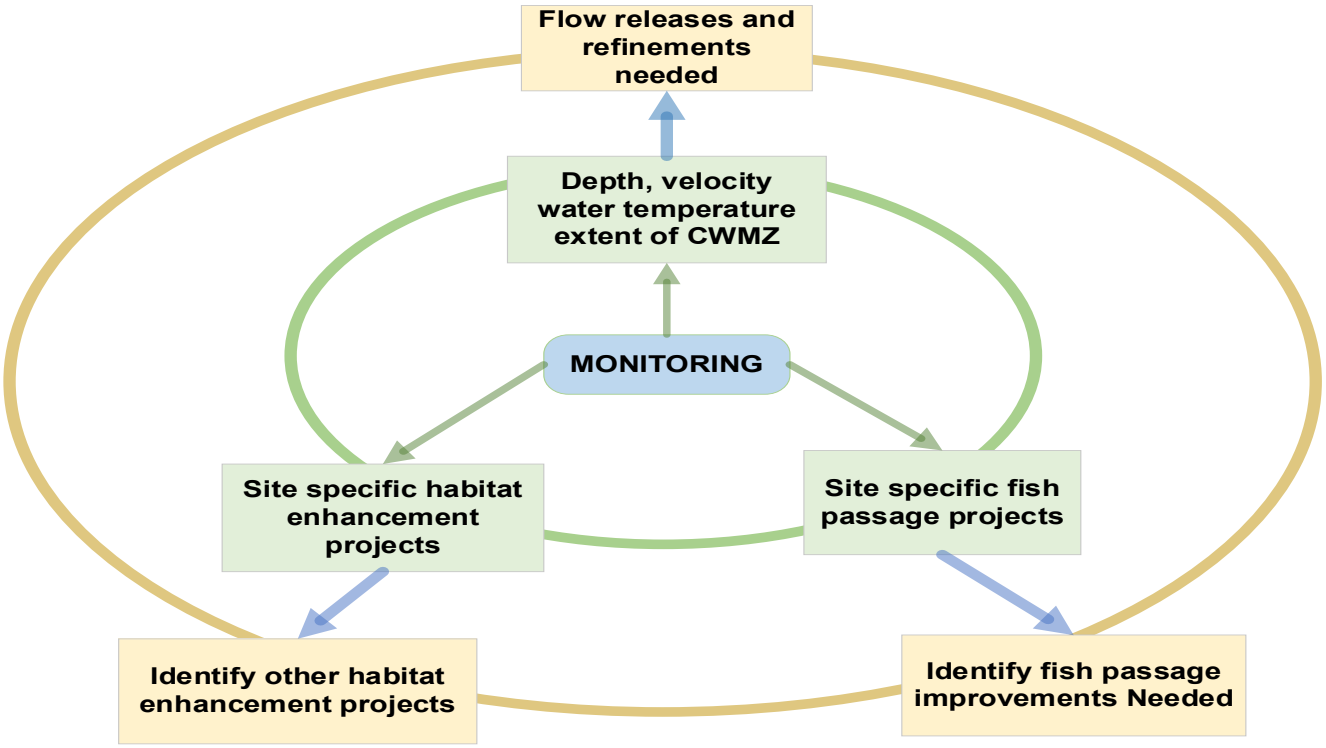
As shown in Figure 6-16, data and analysis from compliance, validation, and long-term trend monitoring, evaluated using measurable objectives identified earlier, will help determine whether or not refinements need to be made for reservoir releases, fish passage projects, or additional habitat enhancement measures to incrementally improve instream habitat conditions. These adaptive management actions need to be identified, prioritized, and included in the draft annual report. In addition to using measurable objectives as one of the key drivers for adaptive management actions, the AMT will also take the following into consideration:

- inter-annual and seasonal variability in hydrology;
- limiting factors that impact salmonid populations within the watersheds;
- water supply commitments and financial constraints outlined in the Settlement Agreement;
- progress in achieving multi-species biological benefits while balancing water supply needs;
- modifications to flow or non-flow elements being considered; and
- the dispute resolution process outlined in Settlement Agreement § 9.1.

It should be noted that changes to water uses or funding allocations above and beyond the funding limit set forth in the Settlement Agreement would require approval from Valley Water's Board of Directors. Such

changes may also trigger additional regulatory reviews or permitting. The Valley Water Board of Directors will have final authority for approving funding and implementation of all substantive adaptive actions that modify the terms and conditions of the Settlement Agreement.

Figure 6-16. Key Drivers for Adaptive Management Actions



6.7.2 Consensus Building Process

Per Settlement Agreement § 9.1, the AMT needs to exercise best efforts to reach consensus on decisions related to the AMP; however, AMT consensus is not a requirement for developing recommendations by the AMT. Points of agreement and disagreement will be documented in the AMT meeting notes. Rather than a traditional "yes" or "no" voting framework, a "gradients of agreement" framework will be applied to AMT discussions in which each AMT member may express:

- **Strong opposition** (not consensus). No amending will be acceptable to the member; opposing member needs to provide rationale for this vote
- **Oppose unless amended** (not consensus). Member will oppose unless the proposal or recommendation is amended; opposing member needs to clarify the rationale for what needs to be amended and specify the amendment
- **Stand aside** or **neutral**. Member will stand aside to allow the group to reach consensus without them, and/or the proposal does not affect the member or their interests
- **Live with it/workable**. Member does not overwhelmingly support the proposal but can live with it
- **Strong support**

The AMT charter is to be further refined to support more effective collaboration among AMT members and support consensus building, whenever possible, on findings and recommendations presented in each annual report and to follow the dispute resolutions process when consensus cannot be reached (including efficient use of informal meetings).

6.7.3 Dispute Resolution Process

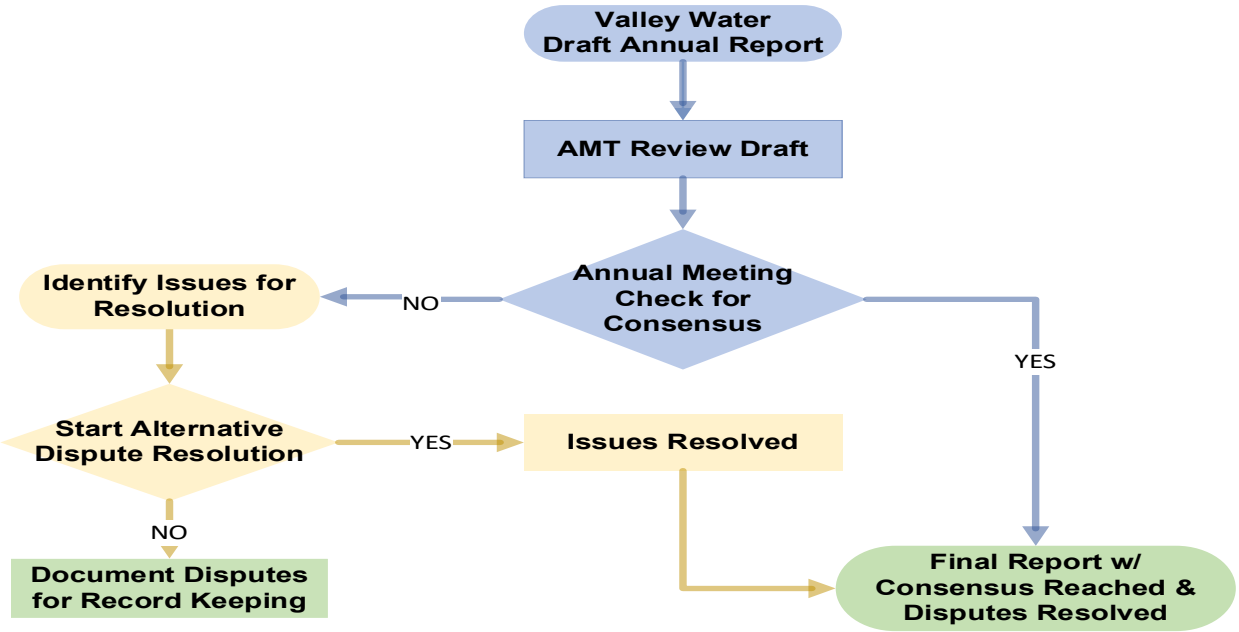
Settlement Agreement § 9.1 stated that:

> Unless the authorizing legislation of an agency (including any Party) with jurisdiction over a dispute resolved by this Agreement mandates a different procedure, all disputes among the Parties regarding this Agreement, including any disputes related to the consistency of the requested license and permit amendments by the SWRCB, will be addressed through non-binding ADR[3].

Settlement Agreement § 9.1.1 outlined the ADR procedures as summarized below.

The AMT process includes a framework and prescribed process for dispute resolution, should disputes occur. Consistent with Settlement Agreement § 9.1, disputes within the AMT would be addressed first through informal discussions of an issue within the AMT. Disputes that are not resolved through the informal AMT process would be subject to non-binding alternative dispute resolution in which the disputing parties would select a neutral mediator to assist in further discussions. If the disputing parties fail to satisfactorily resolve the dispute within 180 days of the initial notice of the dispute, any decision would be effective under the Settlement Agreement if it is supported by Valley Water and each regulatory agency with jurisdiction over the disputed measure. Disputes and their resolution will be documented in AMP notes by the Valley Water AMT member. This process is depicted in Figure 6-17.

Figure 6-17. Decision-making Process



[3] "ADR" means the use of a facilitator or any mutually agreeable form of non-binding mediation or dispute resolution. (Settlement Agreement § 2.2.4)

Chapter 6 – Adaptive Management Program

6.8 Implementation Schedule

Settlement Agreement Appendix B outlined the four phases of the implementation schedule. Phases 1 through 3 are proposed at a 10-year duration for each phase. Phase 4 is proposed to be ongoing, starting from year 31 after the effective date. Effective date, schedule for remaining Phase 1 measures, and conditions for Phases 2 and 3 schedules are further discussed below.

The FHRP consists of four phases. The first three are 10-year phases. Phase I implements actions for all FAHCE watersheds, as well as actions specific to each watershed. Phases 2 and 3 are backup plans, commencing only if all objectives of the preceding phase are not satisfactorily achieved, as determined by the AMT. In Phase 4, Valley Water will continue to provide in perpetuity stream flows in accordance with the FHRP and will conduct ongoing monitoring. It is possible that Phase 4 will directly follow Phase 1.

In addition, flow schedules or other plan actions may be temporarily modified for the purpose of protecting human health and safety. Likewise, repairs and maintenance on SCVWD facilities may temporarily interrupt and be given priority over any aspects of the plan.

6.8.1 Effective Date, Changed Regulatory Pathway, and Implementation Timing

6.8.1.1 Effective Date

Under Settlement Agreement § 2.2.8, "effective date" means when all "conditions precedent" stated in paragraphs 5.3 to 5.8 have been satisfied, and all Initialing Parties have executed the Agreement. Valley Water's and other parties' obligations to implement the Settlement Agreement start on the effective date.

The Article V conditions precedent stated in the Settlement Agreement can be summarized as follows:

- Valley Water completes CEQA compliance for Settlement Agreement implementation;
- The SWRCB amends Valley Water's licenses and permit in substantial conformity with the Settlement Agreement, and concludes that Valley Water's storage, diversion, and use of water in implementing the Settlement Agreement comply with all applicable laws within SWRCB's jurisdiction;
- GCRCD indicates its support for the SWRCB's dismissal of GCRCD's water rights complaint with prejudice[4];
- CDFW issues any approvals required to adopt or implement the Settlement Agreement, including any necessary permits under the California ESA;
- USFWS and NMFS complete any required Section 7 consultation and/or issue any required Section 10 incidental take permits, which in turn would require approval of an HCP; and
- A federal lead agency completes environmental review for Settlement Agreement implementation in accordance with NEPA.

6.8.1.2 Changed Regulatory Pathway

As fully described in Chapter 1 *Introduction* of this FHRP, in 2016 the Initialing Parties agreed in principle to change the "regulatory pathway" detailed in Settlement Agreement Article V to allow federal permitting to occur after issuance of amended WROs, but prior to implementation of any FAHCE measures requiring federal permitting authorization. The obligation of the non-federal parties identified in the Settlement Agreement (SWRCB and CDFW) to implement measures defined in the document on satisfaction of specified conditions was not changed. However, the obligation of the federal parties (USFWS and NMFS) to comply with conditions outlined in the Settlement Agreement (for those measures not already implemented)

[4] On June 9, 2020, GCRCD withdrew from the FAHCE Settlement Agreement.

has been deferred, and will occur after issuance of the amended WROs, but prior to Valley Water's implementation of the FHRP measures that require federal permits or authorizations under applicable law. NMFS and CDFW have provided letters of support for this change.

6.8.1.3 Implementation Timing

The exact start date for implementing specific measures varies from measure to measure and watershed to watershed. Valley Water has already initiated or completed many Phase 1 non-flow measures to improve habitat conditions, even before the Settlement Agreement effective date (see Table 1-1 *Status of Settlement Agreement Measures* for a list of such measures). Also, in 2020 Valley Water convened the AMT and initiated pilot flow measures in Guadalupe and Stevens Creeks.

However, full implementation of flow measures will need to start after all necessary environmental reviews are completed, after necessary WROs are issued to enable flows for environmental benefits, when the dams are safe to operate, and after there is adequate reservoir storage for flow releases per the FAHCE rule curves. For example, for the Coyote Creek watershed, Anderson Reservoir is currently dewatered and will remain so until after construction of the ADSRP is complete, around Year 2031; FAHCE rule curves cannot be implemented until then. During the 10-year construction period for the ADSRP, Valley Water is required to leave the reservoir at dead pool pursuant to a February 2020 order from FERC, and will not be able to provide storage-based releases. Similarly, for the Guadalupe River watershed, completion of seismic retrofits for Guadalupe and Calero Reservoirs, and the Almaden Dam Improvements Project, would be necessary to fully implement FAHCE rule curves due to current seismic restrictions limiting reservoir storage.

6.8.2 Schedule for Remaining Phase 1 Non-flow Measures

The process for implementing a typical non-flow FHRP capital improvement measure would generally involve general steps shown in Table 6-12.

Table 6-12. Potential Schedule for Completing Non-flow Capital Improvement Measures[a]

Processes for completing non-flow capital improvement measures	Year After Effective Date					
	1	2	3	4	5	6+
Feasibility Studies and Baseline Data Collection	x	x				
Project Planning and Design			x			
Environmental Review and Permitting			x	x		
Project Construction					x	
Monitoring and Adaptive Management						x

[a] The implementation schedule for non-flow actions may vary based on site-specific conditions, environmental review and permitting, and other factors.

- **Feasibility study and baseline data collection** – Collect site-specific data at the proposed project location and a reference site (if available) to establish performance indicators and objectives that would link directly to the management objectives established during the FAHCE process. Results would allow Valley Water to design appropriate and feasible alternative actions for meeting measurable objectives and develop a monitoring system for measuring success.
- **Project design and environmental review/permitting** – Develop preferred design alternative(s), complete required environmental review, and identify and obtain necessary permits and agency concurrences. As part of design, environmental review, and permitting efforts, develop a site-specific monitoring plan reflective of performance indicators and objectives identified in previous step.
- **Construction** – Select contractors, coordinate and schedule proposed construction work, and complete the construction work, including final construction inspection.

- **Monitoring and adaptive management** – Implement site-specific monitoring efforts, including monitoring identified in the permits and this AMP, to track project progress, determine lessons learned, and refine and improve current and future projects through adaptive management.
- **Operations and maintenance** – Implement long-term operations and maintenance of the project to ensure measurable objectives are met on a sustained basis and that the project functions as intended.

While the exact start date for full implementation of Phase 1 flow measures is not known at this time, some of the remaining Phase 1 non-flow measures may be completed prior to the effective date or prior to full implementation of Phase 1 flow measures, especially in the Coyote Creek watershed (although ADSRP construction and maintenance of drawdown in Anderson Reservoir may also impact the ability to successfully implement certain non-flow measures prior to completion of the ADSRP). The target completion dates for the remaining Phase 1 non-flow measures are shown in Table 6-13.

6.8.3 Conditional Schedule for Phases 2 and 3

Settlement Agreement § 6.1 identified four phases for implementation of the agreement, with Phases 2 and 3 being conditional. Each phase lasts 10 years, which includes the period for implementing FHRP measures and monitoring the effects of those measures. Settlement Agreement § 6.1.2 stipulated three conditions to be met for Phase 2 and 3 measures to occur:

> (i) the Parties agree that the Overall Management Objectives defined in the immediately preceding phase have not yet been satisfied at the end of that phase;
>
> (ii) the proposed measures are deemed feasible under CEQA and NEPA; and
>
> (iii) the proposed measures are anticipated to contribute to meeting the Overall Management Objectives in a cost-effective manner as provided though the AMP process.

The Settlement Agreement contained a menu of potential Phase 2 measures that have not been defined or evaluated for feasibility. Once Phase 1 measures are fully implemented and 10-year monitoring results are analyzed, a determination of whether or not Phase 2 measures are necessary will be discussed through the AMP decision making process.

Within each 10-year timeframe, Valley Water will collect and analyze monitoring data through an annual reporting cycle working with the AMT. Interim minor adjustments to flow or non-flow measures could be considered by Valley Water and the AMT to better achieve desired results.

The AMT will otherwise consider the 10-year dataset to evaluate the effectiveness and performance of the entire FAHCE program, and will determine whether additional measures are needed in a subsequent phase. Potential actions being considered to meet the subject performance objective would be screened and evaluated by the AMT through modeling, targeted studies, and/or pilot projects before permanent implementation of an adaptive management action is undertaken. The proposed flow and non-flow elements of FAHCE actions will be subject to environmental review under CEQA. Depending on the level of development, individual project elements may be reviewed at a programmatic or project-specific level. Recommended modifications or additional actions identified by the AMT will also undergo an evaluation as part of the project planning process to determine the required level of CEQA review and permitting prior to project approval and implementation. Valley Water will serve as the lead agency for all environmental reviews of projects to be included in the FAHCE program. Proposed project reviews will consider, at a minimum, impacts on fisheries and habitat conditions; existing permits and agreements; financial sustainability; and impacts on non-fishery beneficial uses, such as water supply, water quality, recreation, public health and safety, and wildlife.

Table 6-13. Schedule for Completing Remaining Phase 1 Non-flow Measures

SA Provision	Measure or Sub-Measure	Target for Completion (in Years after Effective Date)	
		5	10
6.2.4.2	**Continuing Efforts to Improve Fish Passage**	**ongoing**	**ongoing**
6.2.4.3	**Develop and Implement a Fisheries Habitat Restoration Plan**		
6.2.4.3.1	Enhance spawning habitat	X	
6.2.4.3.2	Enhance rearing habitat	X	
6.2.4.4.1	Geomorphic Functions Study for each of the Coyote [a] and Guadalupe Creek watersheds		X
6.2.4.4.2	Implement Geomorphic Pilot Projects, if feasible, in Coyote [a] and Guadalupe watersheds		
6.2.4.4.3	Bank Stabilization Guidelines	X	
6.2.4.5	**Advanced Recycled and Other Urban Water Plan**		**X**
6.4.2.1.1(D)	**Plan/Operate for Reducing Smolts Entrainment and Predation at Coyote Percolation Facility[a]**		**X**
6.4.2.1.2 (B)	**Priority Barriers Coyote Creek (owned by others)[b]**		
	Ogier Road Quarry Pond Complex (Barrier FB34; County-owned)[a]		X
	Singleton Road Low-Flow Crossing (Barrier FB24; City of San Jose-owned)[a]	X	
	Unscreened Water Diversion (Barrier GB15; Upper Penitencia Creek; County-owned)[a]		X
6.4.2.1.3 (A)	Coyote Creek Facilities Plan – Laguna Seca Groundwater Remediation[a]		X
6.4.2.1.3 (B)	Coyote Creek Facilities Plan – Metcalf Ponds Steam Corridor Restoration Plan[a]		X
6.4.2.1.4	**Cherry Flat Reservoir Operations Agreement with City of San Jose[a, b]**		**X**
6.4.2.1.5	**Trap and Truck Feasibility Study at Anderson Reservoir[a]**		**X**
6.5.2.2 (A)	**Priority Barriers Stevens Creek (Valley Water-owned)**		
	Fremont Fish Ladder Remediation (Barrier HL3)	X	
	Moffett Fish Ladder Remediation (Barrier HL1)	X	
6.5.2.3	**Portable Multi-port Outlet in Stevens Creek Watershed**		**X**
6.5.2.5	**Trap-and-Truck Feasibility Study at Stevens Creek Reservoir**		**X**
6.6.2.1.2.2	**Priority Barriers Guadalupe Creek (owned by others)**		
	Pheasant Creek Culvert (Barrier AAB1; private owner)[b]		X
	Old Dam (Barrier DB7; private owner)[b]		X
6.6.2.1.3.2	Alamitos Creek Drop Structure - (Bertram Drop Structure; Barrier CB5; private owner)[b]		X

SA Provision	Measure or Sub-Measure	Target for Completion (in Years after Effective Date)	
		5	10
6.6.2.1.3.3 (A)	Alamitos Facilities Plan – Almaden Dam – Evaluate Alternatives to Provide Unimpeded Passage at the Dam		X
6.6.2.1.3.3 (B)	Alamitos Facilities Plan – Almaden Lake – Implemented through Almaden Lake Improvement Project	X	

[a] These measures are included as conservation measures for the ADSRP, and implementation for these measures will need to follow the overall ADSRP schedule.
[b] Valley Water to make reasonable best efforts; these measures assume owners of the barriers will cooperate within the timeframe proposed.

6.8.4 Schedule for Phase 4

Phase 4 is the final phase and could follow Phase 1, 2, or 3 once it is found that the overall management objectives are met. Phase 4 would continue in perpetuity, or for as long as Valley Water diverts water under its licenses and permits. This last phase includes maintenance of instream flows in accordance with previous phases, continuing the monitoring program, and maintaining non-flow measures owned and operated by Valley Water and completed in previous phases.

6.8.5 Temporary Modification in the Event of Emergency

Settlement Agreement § 6.3.1 described the general process for addressing emergency operations resulting in a temporarily modification to the flow schedules and other operational changes. The Settlement Agreement included the schedule for Valley Water to provide notifications to the other parties, a brief written description of the emergency actions, and a written notice to the Initialing Parties requesting a meeting among the parties. Specifically, the Settlement Agreement required the following:

> 6.3.1.1 Within five (5) calendar days of the Emergency, SCVWD will provide written notice of the Emergency to the other Parties.
>
> 6.3.1.2 Within 30 (thirty) calendar days of the notice of the Emergency, SCVWD will provide a brief written summary of the actions taken to address the Emergency.
>
> 6.3.1.3 Upon written notice of a request for a meeting by a Party other than SCVWD, the Parties will meet to discuss the actions taken and alternative measures and conditions that may be used in the event of similar future emergencies.

6.8.6 Temporary Modification to Conduct Routine Maintenance and Repair

Settlement Agreement § 6.3.2 acknowledged that Valley Water may need to adjust flow schedules or make other operational changes to conduct routine facilities maintenance or repairs on facilities within the Three Creeks watersheds. The parties will have an opportunity to object to the planned outage and propose recommendations for alternatives. If objections to the planned outage cannot be resolved among the Initialing Parties, the matter may be subject to formal dispute resolution as outlined for the AMT above. Specifically, the Settlement Agreement outlined a schedule and process for notifying the parties as follows:

> 6.3.2.1 Within 60 (sixty) calendar days in advance of the scheduled maintenance activity, SCVWD will provide written notice to the Parties describing the location and nature of the activity.
>
> 6.3.2.2 Within 30 (thirty) calendar days of the scheduled maintenance activity, a Party other than SCVWD may provide notice of an objection to the scheduled date, time, location or nature of the activity, and propose conditions or alternative measures that may be employed by SCVWD to remove the objection.
>
> 6.3.2.3 SCVWD may proceed with the routine maintenance if (i) if no Party objects; or (ii) SCVWD agrees to adopt the recommendations offered by the objecting Party.
>
> 6.3.2.4 If neither condition stated in paragraph 6.3.2.3 is satisfied, the matter will be referred to the AMT for a further recommendation. If the recommendation is unacceptable to any Party, it may exercise its rights to request formal dispute resolution in accordance with paragraph 9.1.

6.9 Funding for Implementation

Per Settlement Agreement § 8.1.1, for operation of reservoir releases, implementation of non-flow measures, remediation of fish passage impediments owned and operated by Valley Water, contribution to remediation of non-District owned passage impediments, and implementation of the AMP (including monitoring programs and feasibility studies), Valley Water will make available a maximum of $42 million in Phase 1, and if determined as needed, $42 million for each of Phases 2 and 3. Budget carryover will be allowed between the phases if the AMT concludes that the Overall Management Objectives have not been met in the prior phase. However, unspent funds will not be carried over if the Initialing Parties agree that the Overall Management Objectives have been met and no additional measures are required. Any changes to the funding limit must be authorized by the Valley Water's Board of Directors.

Per Settlement Agreement § 6.4.2.1.2(B), 6.5.2.2(B), and 6.6.2.1(B), for barriers owned by others, Valley Water will fund no more than 50% of the cost to remediate the barriers and undertake reasonable best efforts with the owners and the Initialing Parties to secure additional funds necessary to perform the remediation.

Per Settlement Agreement § 6.7.2, the cost for long-term monitoring will not exceed 5% of the annualized cost for measures implemented during Phase 1, and if necessary, Phases 2 and 3.

Per Settlement Agreement § 6.7.3, the financial responsibility for facilities that have been completed prior to the end of Phase 3 will be limited to the actual average annual cost for monitoring and maintenance incurred under the Settlement Agreement in that phase. For any facilities completed after the end of Phase 3, Valley Water's financial responsibility will be increased to include the actual average annual cost for monitoring and maintenance of those facilities for the first 10 years following completion.

Finally, for the FAHCE summary report—a multi-agency fisheries plan for Coyote Creek, Stevens Creek and Guadalupe River in the County—the Settlement Agreement (page 18) stated that the costs for long-term maintenance of habitat enhancement projects are not expected to exceed 10% of the annualized average cost for non-flow activities implemented during the previous 10 years.

While Valley Water focuses on effectively mitigating any adverse impacts resulting from its water supply facilities and operations, additional grants or partner contributions is required for improving fisheries along with its habitat throughout the watersheds. Valley Water continues to work with the Initialing Parties to make best efforts for securing additional funds where available and appropriate to adaptively manage the fish restoration efforts for Three Creeks watershed.

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Appendix A –Settlement Agreement

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SETTLEMENT AGREEMENT REGARDING WATER RIGHTS OF THE SANTA CLARA VALLEY WATER DISTRICT ON COYOTE, GUADALUPE, AND STEVENS CREEKS

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This Settlement Agreement ("Settlement" or "Agreement") is entered into by and between the Santa Clara Valley Water District ("SCVWD"), the United States Department of the Interior, Fish and Wildlife Service ("FWS"), the United States Department of Commerce, National Marine Fisheries Service ("NMFS"), the California Department of Fish and Game ("DFG"), the Guadalupe-Coyote Resource Conservation District ("GCRCD"), Trout Unlimited, the Pacific Coast Federation of Fishermen's Associations, and California Trout, Inc., to resolve disputes regarding SCVWD's use of its water rights on Coyote, Guadalupe, and Stevens Creeks in Santa Clara County, California.

RECITALS

A. SCVWD is authorized to appropriate and acquire water and water rights for any purpose useful to SCVWD and to manage flood control operations within Santa Clara County. (Water Code Appendix Section 60-1 *et seq*.)

B. Beginning in 1928, SCVWD initiated the appropriation, storage, conservation and distribution of water within Santa Clara County, and continuously thereafter it has applied the conserved water to beneficial use. It obtained permits and then licenses from the State Water Resources Control Board ("SWRCB") and its predecessor agencies.

C. On or about July 11, 1996, GCRCD filed a complaint against SCVWD with the SWRCB ("Complaint"). It alleged that SCVWD's use of its water right Licenses on Coyote Creek, Guadalupe River, and Stevens Creek ("Three Creeks") degraded fish, wildlife, water quality, and other beneficial uses, in violation of the California Constitution, Water Code, Fish and Game Code, and the public trust doctrine.

D. On October 19, 1996, SCVWD answered the Complaint and denied GCRCD's allegations. It stated that its appropriation, storage, conservation and distribution of water complied with all applicable laws.

E. Effective October 17, 1997, Central California Coast steelhead (*Oncorhynchus mykiss*) was listed as threatened under the Federal Endangered Species Act (62 Fed.Reg. 43937, August 18, 1997). The Central California Coast steelhead Evolutionarily Significant Unit includes steelhead in coastal California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays.

F. In 2001, Section 60-4 of the SCVWD authorizing act was amended to modify the objectives and powers of SCVWD to include the power "to enhance, protect, and restore streams, riparian corridors, and natural resources in connection with carrying out the objects and purposes set forth in this section."

G. SCVWD and DFG convened settlement negotiations, referred to as the "Fish and Aquatic Habitat Collaborative Effort" ("FAHCE"). FAHCE undertook field investigations and other studies of the environmental conditions that limit the population and distribution of steelhead trout and salmon in the Three Creeks. The resulting scientific record provides a factual basis for this Agreement. Specifically, the field investigations and other environmental studies indicate that if SCVWD's diversion, storage and use of water under its licenses ("Licenses") and permit ("Permit") are conducted in accordance with the terms of this Agreement, SCVWD will be in compliance with all applicable laws that are within the respective jurisdiction of any Party to this Agreement or within the jurisdiction of the SWRCB.

H. This Agreement embodies a comprehensive settlement resulting from FAHCE's work.

NOW THEREFORE, in consideration of the mutual promises specified herein and by conditioning their performance under this Agreement upon satisfaction of the identified conditions precedent set forth in Article V, and for other good and valuable consideration, the Parties agree as follows:

ARTICLE I
PURPOSE OF AGREEMENT

1.1 Purpose of Agreement

1.1.1 Comprehensive Settlement. This Agreement is a settlement among the Parties to comprehensively address and resolve all issues in the Complaint and any related issues arising under state and federal laws that concern the impacts of SCVWD's facilities and operations on the beneficial uses of the Three Creeks, with the exception of mercury contamination issues that are the subject of a pending Natural Resource Damage Assessment ("NRDA") proceeding, and which are not included in or addressed by this Agreement.

ARTICLE II
RULES OF CONSTRUCTION
AND DEFINITIONS

2.1 Rules of Construction. This Agreement will be subject to the following rules of construction.

2.1.1 No Limitation on Statutory Authority. Other than as expressly set forth herein, the Agreement will not be construed to affect or limit the authority of any Party to fulfill its statutory, regulatory, or contractual responsibilities under applicable law.

2.1.2 Negotiated Resolution. The Agreement is made upon the express understanding that it constitutes a negotiated resolution of disputed issues and an Offer of Compromise in accordance with California Evidence Code Section 1152. No Party will be deemed to have consented to any resolution, except as expressly provided herein. The Agreement is not intended and will not be construed, cited or referenced by any Party in any administrative or legal proceeding between or involving any Party, other than: (i) as proof of the Settlement and that the issues addressed herein have been resolved; or (ii) for use in such proceeding to construe or enforce the provisions of the Agreement in the event of default.

2.1.3 Liberal Construction. The provisions of this Agreement will be liberally construed to effectuate its purposes.

2.1.4 Plain Meaning. The provisions of this Agreement will be construed simply according to their plain meaning and will not be construed for or against any Party, as each Party has participated in the drafting of this Agreement and has had the opportunity to have its counsel review it.

2.1.5 Plural and Gender. Whenever the context and construction so require, all words used in the singular will be deemed to be used in the plural, and all masculine will include the feminine and neuter, and vice versa.

2.1.6 Context. Unless the context otherwise requires, the word "including" means without limitation, the word "or" is not exclusive, and the words "herein," "hereto" and "hereunder" refer to this Agreement as a whole.

2.1.7 Exhibits, Appendices, Amendments and Legislation. All Exhibits attached to this Agreement are incorporated by this reference as though fully stated in this Agreement and are deemed to be part of the Agreement. The Appendices will be used in construing the Agreement, by providing background and illustration, but they are not part of the Agreement. Unless the context otherwise requires, (i) a reference to a provision of the Agreement or other document means such Agreement or other document as amended from time to time; and (ii) a reference to a statute means

such statute as amended from time to time and includes any successor statute thereto. Amendment to the Agreement is binding only as to the Parties that execute the Amendment.

2.1.8 Captions. The captions, headings and index of this Agreement are for convenience only and have no effect in the interpretation of this Agreement.

2.2 Definitions

2.2.1 "Adaptive Management Team" or "AMT" means the entity established by paragraph 7.2 of this Agreement.

2.2.2 "Acre-Foot" means a unit of measurement.

2.2.3 "Additional Measures" means measures that (A) SCVWD will implement in Phases Two or Three, (B) additional to those measures implemented in Phase I, (C) provided the criteria stated in paragraph 6.1.2 are met.

2.2.4 "ADR" means the use of a facilitator or any mutually agreeable form of non-binding mediation or dispute resolution.

2.2.5 "Agreement Year" means a specific year after the Agreement becomes effective, counting chronologically from the Effective Date of this Agreement.

2.2.6 "CEQA" means the California Environmental Quality Act (California Public Resources Code Section 21000 *et seq*.).

2.2.7 "Corps" means the United States Army Corps of Engineers.

2.2.8 "Effective Date" means the date upon which all conditions precedent stated in paragraphs 5.3 to 5.8 have been satisfied, and all Parties have executed the Agreement. SCVWD and other Parties' obligations to perform under Articles VI through IX will commence on the Effective Date.

2.2.9 "EIR" means an environmental impact report pursuant to CEQA.

2.2.10 "EIR/EIS" means both an environmental impact report and an environmental impact statement that may be prepared and issued jointly or independently by responsible state and federal agencies in accordance with applicable environmental laws.

2.2.11 "EIS" means an environmental impact statement pursuant to NEPA.

2.2.12 "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood,

earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.

2.2.13 "Environmental Review" means review and analysis of potential impacts of the Agreement on the environment under state and federal laws.

2.2.14 "Environmental Setting" means the baseline conditions of the Three Creeks pursuant to CEQA Guidelines Section 15125 and any corresponding NEPA provision, as further described in paragraphs 5.3.2 and 5.4.2.

2.2.15 "ESA" means the Federal Endangered Species Act (16 U.S.C. Sections 1531 *et seq*.).

2.2.16 "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

2.2.17 "HCP" means "a habitat conservation plan" within the meaning of Section 10 of the ESA (16 U.S.C. Section 1539).

2.2.18 "Initialing" means the initialing of this Agreement by a legally authorized representative on behalf of a Party.

2.2.19 "Initialing Date" means the first date when all Parties have initialed this Agreement, or when a subset of Parties have initialed the Agreement as set forth in paragraph 4.1.2.

2.2.20 "NEPA" means the National Environmental Policy Act (42 U.S.C. Sections 4321 *et seq*.).

2.2.21 "Party" or "Parties" means a party to this Agreement.

2.2.22 "SWRCB" means the State Water Resources Control Board.

2.2.23 "Three Creeks" means Coyote Creek, Guadalupe River, and Stevens Creek and their watersheds, including tributaries.

ARTICLE III
TERM, SUSPENSION, WITHDRAWAL AND TERMINATION

3.1 Perpetual Agreement Consisting of Four Phases. This Agreement will consist of a total of four phases. These are: three phases of ten years each for implementation following the Effective Date, and a continuing perpetual phase thereafter. Each of the initial three phases includes distinct management objectives and measures to achieve the Overall Management Objectives stated in paragraph 6.2.2. The fourth and perpetual phase will serve to continue the benefits obtained under Phases One, Two, and Three.

3.1.1 The Agreement, and specifically, the obligations to perform under Articles VI through IX, will be effective as of the Effective Date.

3.1.2 The term of Phase One begins on the Effective Date and continues until the last day of Agreement Year Ten.

3.1.3 The term of Phase Two begins on the first day of Agreement Year Eleven and continues until the last day of Agreement Year Twenty.

3.1.4 The term of Phase Three begins on the first day of Agreement Year Twenty-One and continues until the last day of Agreement Year Thirty.

3.1.5 Phase Four begins on the first day of Agreement Year Thirty-One and continues for so long as SCVWD is diverting water under its Licenses and Permit.

3.2 Termination. The obligations of any Party under this Agreement may be terminated by and for that Party by its withdrawal from the Agreement. However, a Party may withdraw from this Agreement only if: (i) it has complied with the ADR procedures stated in paragraph 9.1.1 to resolve the dispute; or (ii) the withdrawal is required to fulfill its statutory or regulatory responsibility. The withdrawal of any Party other than the SCVWD will not terminate the Agreement among the remaining Parties. However, upon the withdrawal of any other Party, SCVWD will have a right to terminate the Agreement among the remaining Parties by providing notice to them and the SWRCB within 90 (ninety) days of such withdrawal or within a reasonable time following the initiation of legal proceedings against the SCVWD by any withdrawing Party.

3.3 Suspension. Any Party that is a government agency may suspend participation or, if necessary, withdraw from this Settlement, without first using the ADR procedures referenced in paragraph 3.2 and more fully set forth in paragraph 9.1.1 in the event of: (i) an Emergency; or (ii) if required to fulfill a statutory or regulatory responsibility. Upon the withdrawal from the Settlement by any Party, each remaining Party (whether or not a governmental agency) will have discretion whether, with the consent of the other Parties, it will suspend its own performance.

ARTICLE IV
PRE-EFFECTIVE DATE AND CONTINUING COVENANTS

4.1 Pre-Effective Date Covenants. The Parties make and will implement the following covenants, which apply before the Effective Date.

4.1.1 SCVWD will be solely responsible for its costs of processing Environmental Review of the Agreement, and these costs will not apply against the maximum expenditure limitations of paragraph 8.1.1. SCVWD will not have an obligation to reimburse or otherwise pay Parties for any of their assistance, participation, or cooperation in any activities pursuant to the Agreement before the Effective Date.

4.1.2 After the Initialing Date the Parties will jointly submit the Agreement to the SWRCB. They will represent that, to the best of their current knowledge, SCVWD's use of its Licenses and Permit, if amended in substantial conformity with this Agreement, will comply with all applicable laws, including but not limited to the public trust doctrine and Article X, Section 2 of the California Constitution. Accordingly, they will ask the SWRCB to amend such Licenses and Permit in substantial conformity with the Agreement and to issue findings in substantial conformity with those set forth in Exhibit B attached hereto. If the SCVWD, FWS, NMFS, DFG, and GCRCD have initialed the Agreement within 90 (ninety) days after Initialing by any Party, those Parties will submit the Agreement to the SWRCB under this paragraph regardless of the failure of any of the other Parties to initial the Agreement.

4.1.3 In proceedings before the SWRCB to amend the Licenses and Permit in accordance with this Agreement, the Parties will support the adoption of license and permit amendments in substantial conformity with this Agreement and the issuance of each of the findings set forth in Exhibit B, if the record continues to demonstrate that these measures are the best alternative to protect and maintain the beneficial uses of these waters and otherwise comply with applicable laws. The Parties may modify the Agreement if the record demonstrates that another alternative will better protect and maintain such beneficial uses. However, SCVWD may not be compelled to implement the Agreement unless the amendments to its Licenses and Permit and corresponding findings are issued by the SWRCB in substantial conformity with the Agreement.

4.1.4 On submittal described in paragraph 4.1.2, GCRCD will indicate its support for the SWRCB's dismissal of its Complaint against SCVWD upon the SWRCB's adoption of the requested license and permit amendments and the issuance of the related findings in substantial conformity with the Agreement. Upon the SWRCB's approval of the license and permit amendments and the issuance of the related findings in substantial conformity with the Agreement, GCRCD will withdraw its Complaint with prejudice.

4.1.5 Unless a Party, within 30 (thirty) days of the SWRCB's final order issuing license and permit amendments and related findings, objects in writing to all other Parties that such amendments

or findings do not substantially conform with the Agreement, no Party will seek administrative or judicial review of the SWRCB's order.

4.1.6 If a Party objects in writing to all other Parties that the license or permit amendments or the related findings do not substantially conform with the Agreement, the Parties will attempt to resolve the dispute, pursuant to the ADR procedures of paragraph 9.1.1, prior to the deadline for administrative or judicial review. An objecting Party may seek such review of the amendments if the dispute is not resolved by that deadline. If judicial review is taken, the Parties will use the ADR procedures of paragraph 9.1.1 in an effort to resolve the dispute. No Party may be compelled to proceed to implement its obligations under Articles VI through IX of this Agreement unless it determines, in its sole discretion, that the SWRCB approval and findings are in substantial conformity with the Agreement.

4.1.7 The Parties will execute the Agreement upon satisfaction of all conditions precedent stated in paragraphs 5.3 to 5.8.

4.2 Continuing Covenants Before and After Effective Date. The Parties make the following continuing covenants, which will take effect on initialing and continue in effect for the term of the Agreement.

4.2.1 The Parties will perform their obligations arising under this Agreement in good faith.

4.2.2 The Parties will reasonably cooperate in the sharing of data, information and documents to the extent necessary to satisfy the filing and recording requirements of State and Federal regulatory agencies, including those of the SWRCB.

4.2.3 Subject to its right to terminate this Agreement pursuant to paragraph 3.2, SCVWD will operate its diversion, storage and distribution of water and use its water rights in accordance with the requirement that the water be used reasonably and beneficially and in accordance with the terms and conditions of the Permit and Licenses as they may be amended by the SWRCB under its reserved jurisdiction, from time to time.

4.2.4 Each Party independently represents that, subject to the development or discovery of significant new information (including change in applicable law) relevant to this Agreement, each of their respective responsibilities regarding the subject matter of this Agreement has been, is, or will be satisfied through accomplishment of the measures set out in this Agreement.

4.2.5 Prior to securing any binding commitment and thereafter, each Party will give due regard to its responsibilities under applicable law.

4.2.6 SCVWD is solely responsible for the operation of the facilities subject to the Agreement. By this Agreement, no Party other than SCVWD accepts or obtains any responsibility for such operation.

4.2.7 SCVWD will pay for the cost of its actions required by the Agreement or the license and permit amendments. SCVWD will not have an obligation to reimburse or otherwise pay Parties for any of their assistance, participation, or cooperation in any activities pursuant to the Agreement or the license and permit amendments.

4.2.8 Implementation of this Agreement by FWS or NMFS is subject to the Anti-Deficiency Act (31 U.S.C. Section 1341) and the availability of appropriated funds. Similarly, implementation of the Agreement by DFG is subject to the availability of appropriated funds. The Agreement is not intended and will not be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury or the State of California Treasury.

4.2.9 Request for Amendment of the Licenses and Permit

4.2.9.1 Request for Amendment by Party Other than SCVWD. After the Effective Date, and except as required to fulfill statutory or regulatory responsibilities, a Party other than SCVWD may not seek to further amend or otherwise reopen the Licenses and Permit, unless significant new information, not available as of the Effective Date, including change in applicable law, demonstrates that the Licenses and Permit, as amended in conformity with this Agreement, do not comply with applicable law. In such an event, the Party will provide SCVWD with at least 90 (ninety) days notice to consider the new information and the Party's application of that information to the Settlement. In the event of an Emergency, a Party may seek to amend or reopen the Licenses and Permit after providing 72 (seventy-two) hours notice to SCVWD and other Parties. The notice will include a brief summary of the condition creating the Emergency and the relief that the Party intends to request from the SWRCB. Upon a Party's request to reopen SCVWD's water rights Licenses or Permit, SCVWD will have the sole discretion to either suspend performance or, with the consent of the then remaining Parties, to withdraw from the Settlement pursuant to paragraph 3.2.

4.2.9.2 Request for Amendment by SCVWD. SCVWD will not seek to amend its Permit and Licenses in a manner that is inconsistent with this Agreement. SCVWD will provide written notice to the other Parties in advance of filing any petition to the SWRCB to change the place, purpose, method, or quantity of use stated in the Permit or Licenses listed in Exhibit A. In the event that a Party contends that a proposed change is inconsistent with the Agreement, they may resolve the dispute in accordance with the dispute resolution procedures set forth in Article IX.

ARTICLE V
EXPRESS CONDITIONS PRECEDENT TO IMPLEMENTATION OF ARTICLES VI-IX

5.1 Initialing and Release of Agreement. SCVWD and each other Party will initial the Agreement. Following the Initialing Date, the Agreement will be submitted to the SWRCB as an offer of settlement of the Complaint and will be made available for public review and comment.

5.1.1 The initialing of the Agreement will not create any binding commitment by any Party to effect any change in the environment, to carry out any project within the meaning of CEQA or NEPA, or to implement the measures set forth in Articles VI through IX, other than to make the Agreement available for public review and comment and for the purpose of defining a project for Environmental Review.

5.1.2 No Party will allege or seek judicial or administrative redress based upon detrimental reliance or estoppel as a result of actions taken by any other Party after the other Party's initialing of this Agreement and before the Effective Date.

5.2 Time Limit for Satisfaction of Conditions Precedent. SCVWD and other Parties' obligations to implement Articles VI through IX, inclusive, will commence on the Effective Date, upon satisfaction of each of the express conditions precedents set forth in paragraphs 5.3 through 5.8 and within 24 (twenty-four) months of the Initialing Date.

5.3 CEQA Compliance. A condition precedent to the Effective Date is that the SCVWD will have completed Environmental Review for the project in accordance with the provisions of CEQA and all applicable laws within its jurisdiction.

5.3.1 This Agreement will form the basis of the project for the purposes of CEQA. It consists of the complete settlement of the Complaint. The project consists of all commitments in the Agreement, including commitments to continue activities undertaken by SCVWD in response to the Complaint and prior to the start of the environmental analysis.

5.3.2 The baseline for purposes of CEQA will not include any activities undertaken by SCVWD after July 11, 1996, the date on which the Complaint was filed, in response to the Complaint or otherwise as part of the FAHCE process, inasmuch as these activities are experimental management, minor physical alterations, or within the range of ongoing operations.

5.3.3 As provided in the regulatory approvals for flood control projects and other programs, and subject to paragraph 5.3.2, SCVWD will monitor existing conditions of the Three Creeks and will use the monitoring results as part of the Environmental Setting in the CEQA and other regulatory reviews of this Agreement.

5.3.4 Environmental Review will be deemed complete when SCVWD has certified its Environmental Review document in compliance with CEQA.

5.3.5 The Parties will exercise reasonable best efforts to coordinate the CEQA and NEPA related reviews. To the extent practicable, an integrated environmental document will be used.

5.4 NEPA Compliance. A condition precedent to the Effective Date is that the lead federal agency (whether the FWS, NMFS, or another agency) for the actions contemplated in this Agreement will have completed Environmental Review for the project in accordance with NEPA and all related applicable laws.

5.4.1 This Agreement will form the basis of the description of the preferred alternative(s) for the purposes of NEPA. It consists of the complete settlement of the Complaint. The project consists of all commitments in the Agreement, including commitments to continue activities undertaken by SCVWD in response to the Complaint and prior to the start of the environmental analysis.

5.4.2 The baseline for purposes of NEPA will not include any activities undertaken by SCVWD after July 11, 1996, the date on which the Complaint was filed, in response to the Complaint or otherwise as part of the FAHCE process, inasmuch as these activities are experimental management, minor physical alterations, or within the range of ongoing operations.

5.4.3 Environmental Review under NEPA will be deemed complete when the FWS, the NMFS, and the Corps have certified that their respective reviews comply with NEPA.

5.4.4 The Parties recognize that it is likely that the Corps, the FWS, or other federal agency will be the lead agency for purposes of preparing the NEPA document. FWS and NMFS will coordinate environmental review with the Corps. Without regard to which federal agency acts as lead agency, the NEPA document will include a comprehensive conservation strategy.

5.5 SWRCB. A condition precedent to the Effective Date is that, following any administrative or judicial appeal, the SWRCB will have:

5.5.1 Ordered amendments to the Licenses and Permit in substantial conformity with the Agreement; and

5.5.2 Adopted findings in substantial conformity with those set forth in Exhibit B that conclude that SCVWD's storage, diversion and use of water in implementing this Agreement comply with all applicable laws that are within the jurisdiction of the SWRCB. This finding will cover repair and replacement of the existing SCVWD facilities pursuant to which SCVWD presently diverts, stores and distributes water under the Permit and Licenses set forth in Exhibit A. New facilities, including any proposed diversions, storage or distribution of water unrelated to this Agreement, will require independent review and analysis.

5.6 GCRCD. A condition precedent to the Effective Date is that the GCRCD will have indicated its support for the SWRCB's dismissal of GCRCD's Complaint with prejudice. GCRCD will unconditionally support dismissal of its Complaint by the SWRCB if it determines that findings or amendments to the Permit and Licenses in the SWRCB's final order are in substantial conformity with the Agreement. If it determines that such findings or amendments are not in substantial conformity, GCRCD may, consistent with paragraph 4.1.6, elect not to support dismissal of its Complaint or may undertake an administrative or judicial appeal of the SWRCB's order.

5.7 DFG. A condition precedent to the Effective Date is that DFG, in its discretion and in accordance with all applicable laws, will have issued any approvals required to adopt or implement the Agreement, including any permit or approvals that may be necessary under the California Endangered Species Act. Such issuance will be done only after DFG has been provided with a full and fair opportunity to evaluate the scientific record, including but not limited to the EIR/EIS and any other relevant facts and circumstances.

5.8 FWS and NMFS. A condition precedent to the Effective Date is that FWS and NMFS, each in its complete and sole discretion and in accordance with all applicable laws, and only after having been provided a full and fair opportunity to evaluate the scientific record, including but not limited to the EIR/EIS and any other relevant facts and circumstances, will have:

5.8.1 Determined, after completing consultation in full compliance with all requirements of Section 7 of the ESA with any and all responsible federal action agencies, including but not limited to the Corps, that issuance of any permits under the Clean Water Act or any other federal action subject to such consultation that is required to implement the measures contained in this Agreement will neither jeopardize the continued existence of any listed species nor result in the adverse modification of any designated critical habitat, as those terms are used within the meaning of the ESA and provided in Exhibit C;

5.8.2 Found that the Agreement or the implementation of its measures will either not require the issuance of an incidental take permit or issued all such permits under Section 10 of the ESA as may be necessary to implement the Agreement as provided in Exhibit C;

5.8.3 If a permit is required under Section 10 of the ESA, approved an HCP for the Three Creeks subject to this Settlement, inclusive of a no-surprises provision, for a period not less than 50 (fifty) years from the Effective Date as provided in Exhibit C.

5.8.3.1 The HCP will be a multi-species program, which will include all federally-listed species, and all candidate species, proposed species, and species of special concern at the time the HCP is submitted.

5.8.3.2 Upon issuance of an incidental take permit, SCVWD will be provided all no surprises assurances, as set forth in the implementing regulations for the ESA at 50 CFR 17.22(b)(5) and 50 CFR 222.307(g).

5.8.4 Promised to subsequently work in good faith to incorporate the conservation strategy within the HCP for the Three Creeks subject to this Agreement into a countywide HCP for Santa Clara County for a period of not less than 50 (fifty) years from the Effective Date, if and when such a countywide HCP is adopted.

ARTICLE VI
PROGRAM FOR RESTORATION OF THREE CREEKS

6.1 In General. The Agreement will be implemented in Four Phases.

6.1.1 All measures described as occurring in Phase One that do not require additional study, Environmental Review, or modification of capital facilities, including the flow measures, will begin immediately after the Effective Date. All other measures will be implemented expeditiously, not later than the last day within the ten-year term of Phase One.

6.1.2 Implementation of Additional Measures in Phases Two and Three will occur only if: (i) the Parties agree that the Overall Management Objectives defined in the preceding phase(s) have not yet been satisfied at the end of the 10-year term of the immediately preceding phase; (ii) the proposed measures are deemed feasible under CEQA and NEPA; and (iii) the proposed measures are anticipated to contribute to meeting the Overall Management Objectives in a cost-effective manner as provided in paragraph 7.3. Unless each of these three criteria is satisfied, SCVWD will be discharged of further responsibility for carrying out or funding Additional Measures described in each such Phase. Appendix D describes the proposed schedule for implementing measures in Phases One through Three.

6.1.3 In Phase Four, SCVWD will continue the flow and other measures set forth in paragraph 6.7.

6.2 Elements Common to the Three Creeks

6.2.1 Beneficial Uses. This Agreement commits SCVWD and other Parties to a program of measures intended to restore and maintain fisheries, wildlife, water quality and other beneficial uses of the Three Creeks in good condition. The overall management objectives stated in paragraph 6.2.2 focus on steelhead trout (*Oncorhynchos mykiss*) and chinook salmon (*Oncorhynchus tshawytscha*). Since the Agreement is intended to restore both fisheries to good condition in the Three Creeks, the Agreement will not be interpreted or administered in a manner that favors one fishery to the detriment of the other. Accordingly, in construing and implementing this Agreement, the Parties will give equal consideration to both fisheries. In adaptive management of a given measure as provided in paragraph 7.1, the Parties (through the Adaptive Management Team) may implement such measure in a manner which is more beneficial for one fishery than another, after due consideration of the criteria stated in paragraph 7.3.

6.2.2 Overall Management Objectives. Implementation of the Agreement will restore and maintain healthy steelhead trout and salmon populations as appropriate to *each* of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.2.3 Storage, Diversion, and Rediversion of Water. SCVWD will store, divert, and redivert water in a manner that is consistent with the Overall Management Objectives set forth in paragraph 6.2.2.

6.2.4 Phase One Measures

6.2.4.1 Flow Measures. Unless modified under paragraph 6.3, SCVWD will make reservoir flood releases, fisheries passage releases, and other planned (non-Emergency) operations changes using the criteria described in Appendix E.

6.2.4.2 Continuing Efforts to Improve Fish Passage. With the support of the other Parties, SCVWD will make reasonable best efforts to assure that passage barriers other than those listed in paragraphs 6.4 through 6.6, inclusive, are remediated. At a minimum, pursuant to the adaptive management program of Article VII, the Parties will periodically evaluate and determine whether such barriers interfere with the timely achievement of the management objectives for each creek.

6.2.4.3 Fish Habitat Restoration Plan. In coordination with DFG, SCVWD will develop and implement a Fish Habitat Restoration Plan that will specify techniques, locations, and implementation schedules to enhance spawning and rearing habitats for steelhead trout and salmon in the Three Creeks. As early as feasible in the development of the plan, SCVWD will work cooperatively with DFG and NMFS to obtain their input on the content of the plan.

6.2.4.3.1 Spawning Habitat. The plan will include a program of placement of gravel to enhance existing spawning habitat. It will also include:

(A) Identification of existing habitat that is suitable for spawning, but inadequate for gravel;

(B) Procedures to develop an annual work plan for the Adaptive Management Team's review; and

(C) Commitment to implement the program, subject to periodic review and modification by the Adaptive Management Team.

6.2.4.3.2 Rearing Habitat. The plan will include a program to enhance rearing habitat. This program will include:

(A) Appropriate placement of large organic debris, channel modifications including berms, and riparian canopy enhancement;

(B) Procedures to develop an annual work plan for the Adaptive Management Team's review; and

(C) Commitment to implement the program, subject to periodic review and modification by the Adaptive Management Team.

6.2.4.3.3 Fish Passage. The plan will include a program to enhance passage to suitable spawning and rearing habitat. It will incorporate the priorities listed below, unless the Adaptive Management Team established pursuant to paragraph 7.2 determines other priorities.

6.2.4.4 Geomorphic Functions. SCVWD will undertake the following measures to enhance and restore the geomorphic functions of the three watersheds subject to the Settlement.

6.2.4.4.1 SCVWD will prepare a Geomorphic Functions Study. The study will:

(A) Identify stream reaches where geomorphic functions necessary for channel maintenance or formation (e.g., hydraulic runoff, bedload transport, channel migration, riparian vegetation succession) are impaired; and

(B) For each such reach, evaluate the feasibility of restoring such geomorphic functions. SCVWD will consider: modifying the channel dimensions for the purpose of carrying bank-full flow; varying the meander shape; planting riparian vegetation; removing culverts, riprap, and other structures; and stabilizing the area with the use of bioengineering techniques. The study will include an alternative that assumes current right-of-way constraints, and another alternative that investigates right-of-way increases where needed.

6.2.4.4.2 If found to be feasible, SCVWD will develop and implement pilot projects to restore geomorphic functions. These pilot projects will be a minimum of 2,000 linear feet of channel in each of the Three Creeks, chosen for maximum benefit to the steelhead trout and salmon fisheries.

6.2.4.4.3 SCVWD will adopt general guidelines for bank stabilization projects undertaken by other persons. These guidelines will be designed to maintain or enhance geomorphic functions, riparian conditions and fish habitat. They will include techniques and strategies based on the ability of riparian vegetation to hold soil, protect banks, and otherwise stabilize the stream channel. They will address use of structures such as jacks, lunkers, dirt-filled gabions, rock work, and crib walls, if necessary to rebuild a stream bank and offer stability until riparian vegetation is established.

6.2.4.5 Advanced Recycled and Other Urban Water Plan. In cooperation with the City of San Jose, SCVWD will complete an Advanced Recycled and other Urban Water Plan. The plan will evaluate the feasibility and suitability of using the water, supplied by the City of San Jose after Advanced Recycled Water Treatment ("ARWT"), to enhance the continuity of instream flow suitable for achieving the Overall Management Objectives in the Three Creeks, from the highest point of fish passage downstream to the San Francisco Bay. It will also evaluate the feasibility of using other urban water, such as discharges from storm sewers, sump pumps, and similar sources, for this same purpose. The evaluation of feasibility will include, for each watershed, a reasonable range of alternatives for: (i) direct use of ARWT water and other urban water for such instream flow; and (ii) conjunctive use of natural flow, imported water, groundwater, and ARWT or other urban water. The evaluation of suitability will include impacts on fish habitat (including water temperature, toxicity, and endocrine disruption) and other beneficial uses. If a feasible and suitable alternative exists, the plan will recommend action, including designs and schedules for construction of any necessary facilities.

6.2.4.5.1 SCVWD will assist the City of San Jose in the implementation of the plan, including an appropriate contribution of capital and operation and maintenance costs directly associated with use of recycled or other urban water found to be feasible and appropriate.

6.2.4.5.2 Every ten years after the plan has been completed, SCVWD will review any new information or laws that may alter any plan recommendations against use of ARWT or other sources of urban water for augmenting instream flows.

6.2.4.5.3 In recommending or deciding upon the use of recycled water or other urban water as a measure to implement the Overall Management Objectives, the Parties will be guided by the criteria stated in paragraph 7.3.

6.3 Permissible Modifications to Implementation Common to All Watersheds.

6.3.1 Flow schedules or other operational changes described below may be temporarily modified by SCVWD in the event of an Emergency.

6.3.1.1 Within five (5) calendar days of the Emergency, SCVWD will provide written notice of the Emergency to the other Parties.

6.3.1.2 Within 30 (thirty) calendar days of the notice of the Emergency, SCVWD will provide a brief written summary of the actions taken to address the Emergency.

6.3.1.3 Upon written notice of a request for a meeting by a Party other than SCVWD, the Parties will meet to discuss the actions taken and alternative measures and conditions that may be used in the event of similar future emergencies.

6.3.2 Flow schedules or other operational changes described below may be temporarily modified by SCVWD to conduct routine facilities maintenance or repairs on all reservoirs,

diversions, stream flow stations, pipelines or other appurtenant facilities and structures owned by SCVWD in the Three Creeks.

6.3.2.1 Within 60 (sixty) calendar days in advance of the scheduled maintenance activity, SCVWD will provide written notice to the Parties describing the location and nature of the activity.

6.3.2.2 Within 30 (thirty) calendar days of the scheduled maintenance activity, a Party other than SCVWD may provide notice of an objection to the scheduled date, time, location or nature of the activity, and propose conditions or alternative measures that may be employed by SCVWD to remove the objection.

6.3.2.3 SCVWD may proceed with the routine maintenance if (i) if no Party objects; or (ii) SCVWD agrees to adopt the recommendations offered by the objecting Party.

6.3.2.4 If neither condition stated in paragraph 6.3.2.3 is satisfied, the matter will be referred to the AMT for a further recommendation. If the recommendation is unacceptable to any Party, it may exercise its rights to request formal dispute resolution in accordance with paragraph 9.1.

6.4 Coyote Creek Watershed

6.4.1 Management Objectives

6.4.1.1 Overall Management Objective. Implementation of the Agreement will restore and maintain a healthy steelhead trout and salmon population in the Coyote Creek watershed, by providing: (A) Approximately five miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek; and (B) Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.4.1.2 Phase Two Management Objectives. Subject to paragraph 6.1.2, the distribution of suitable habitat for salmon and steelhead trout will be materially extended up to an additional five miles (plus or minus) below Anderson Dam; or up to ten miles above Anderson Reservoir or Coyote Reservoir, as determined feasible.

6.4.1.3 Phase Three Management Objective. Subject to paragraph 6.1.2, the available habitat will be extended into suitable tributaries or above Anderson Reservoir or Coyote Reservoir.

6.4.2 Restoration Measures

6.4.2.1 Phase One Measures. In support of the Phase One Management Objectives described above, in each Agreement Year SCVWD will undertake the following measures:

6.4.2.1.1 Flow Releases. Unless modified under paragraph 6.3, SCVWD will make flow releases from Anderson Reservoir to Coyote Creek below the intake of the Coyote Canal as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases for the purpose of providing winter base flows in accordance with the reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. If the combined storage of Anderson and Coyote Reservoirs exceeds 80,000 acre-feet during this period, SCVWD will release a pulse flow from Anderson Reservoir through the outlet or the Anderson Hydroelectric Facility in order to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

(C) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 18 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Anderson Dam to approximately Golf Course Drive) as available cold water supply will allow. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E SCVWD may, but is not obligated to, substitute cold water from the Santa Clara conduit.

(D) February 1 to April 30. Within thirteen (13) months of the Effective Date, SCVWD will have a completed plan for addressing the potential entrainment of smolts in the coyote Percolation Facility. Upon completion of the plan, SCVWD will modify operation of Coyote Percolation Facility to minimize the creation and maintenance of ponds of water so to reduce the entrainment and predation of out-migrating steelhead trout smolts in accordance with the plan.

6.4.2.1.2 Priority Barriers

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in

the following table. SCVWD will be responsible for the costs of such remediation.

Watershed	Barrier Code	Barrier Name
Upper Penitencia	TBD	Penitencia Recharge Pond Diversion
Upper Penitencia	TBD	Overfelt Recharge Pond Diversion

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these barriers and will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Coyote Creek	FB34	Ogier Road Quarry Pond Complex	Santa Clara County
Coyote Creek	FB24	Singleton Road Low-Flow Crossing	City of San Jose
Upper Penitencia Creek	TBD	Unscreened Water Diversion	Santa Clara County

6.4.2.1.3 Coyote Creek Facilities Plan. SCVWD will complete a Coyote Creek Facilities Plan. The plan will include two parts, stated in paragraphs (a) and (b) below. SCVWD will implement the plan after obtaining any necessary regulatory approvals.

(A) Laguna Seca Groundwater Remediation. The plan will evaluate alternatives to manage groundwater inflow from Coyote Creek, for the purpose of allowing flow releases from Anderson Dam to continue uninterrupted to the vicinity of Metcalf Ponds in a manner that protects other parties' properties and water rights. If a feasible alternative exists, SCVWD will recommend action, including design and construction schedules.

(B) Metcalf Ponds Stream Corridor Restoration. The plan will evaluate alternatives to isolate percolation ponds, quarry pits, and other structures from the active channel in the vicinity of

Metcalf Road, in order to reestablish a free-flowing condition through that vicinity. If a feasible alternative exists, the plan will recommend action, including design and construction schedules.

6.4.2.1.4 Cherry Flat Reservoir. SCVWD will undertake reasonable best efforts to develop and execute a cooperative agreement with the City of San Jose regarding the operation of Cherry Flat Reservoir on Upper Penitencia Creek, to help ensure that habitat upstream of SCVWD's facilities is kept in good condition subject to the availability of water for release from the reservoir. In coordination with the cooperative agreement and operational plan for Cherry Flat Reservoir, SCVWD will also develop and execute an operational plan for SCVWD's facilities on Upper Penitencia Creek designed to maintain and enhance stream flow conditions for steelhead trout downstream of the Noble Avenue water diversion. The operational plans for Cherry Flat Reservoir and SCVWD facilities will seek to provide suitable flow conditions for adult passage, spawning, egg incubation, juvenile rearing and downstream migration of steelhead trout in Upper Penitencia Creek.

6.4.2.1.5 Trap and Truck. SCVWD will undertake a feasibility study of trap- and-truck operations at Anderson Reservoir, for the purpose of upstream and downstream migration of steelhead trout. The study will evaluate the suitability of spawning and rearing habitat for steelhead trout above Anderson and Coyote Reservoirs; the practicality of moving steelhead trout above the reservoirs and achieving successful out-migration; and the potential effects of such movement on existing steelhead trout populations in Coyote Creek.

6.4.2.2 Phase Two Additional Measures. Subject to paragraph 6.1.2, Additional Measures will be implemented as needed to achieve the Overall Management Objectives. These Additional Measures will be defined by the Phase One feasibility studies. The menu of potential Additional Measures includes:

(A) Revise water releases from Anderson Reservoir to provide for continuous stream flows in Coyote Creek from the reservoir to approximately Metcalf Road.

(B) Relocate the Coyote Percolation Facility off-stream.

(C) Remove or remediate Priority No. 2 barriers owned by SCVWD.

(D) Use recycled or other urban water to augment instream flows in Coyote Creek.

(E) Implement a Trap and Truck operation to relocate adult steelhead trout into upper watershed habitat above Anderson or Coyote Reservoirs and to assist in smolt out-migration.

6.4.2.3 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve the Overall Management Objectives.

6.5 Stevens Creek Watershed

6.5.1 Management Objectives

6.5.1.1 Overall Management Objectives. Implementation of the Agreement will restore and maintain a healthy steelhead trout population in the Stevens Creek watershed, by providing:

(A) Suitable spawning and rearing habitat below Stevens Creek Dam within a cold water management zone determined on an annual basis through the development of an operations plan; and

(B) Adequate passage for adult steelhead trout to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.5.1.2 Phase Two Management Objectives. Subject to paragraph 6.1.2, the distribution of suitable fishery habitat for steelhead trout will be materially extended up to an additional five miles (plus or minus) above Stevens Creek Reservoir or an additional two miles below Stevens Creek Reservoir, as determined feasible.

6.5.1.3 Phase Three Management Objectives. Subject to paragraph 6.1.2, the suitable habitat will be extended into suitable tributaries or above Stevens Creek Reservoir.

6.5.2 Phase One Restoration Measures. In support of the Phase One Management Objectives described above, in each Agreement Year, SCVWD will undertake the following measures.

6.5.2.1 Flow Releases. Unless modified under paragraph 6.3, SCVWD will make flow releases from Stevens Creek Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout spawning and egg incubation. SCWVD will make reservoir releases for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. Pulse flow releases will be made from Stevens Creek Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout smolt. SCVWD will make pulse flow

releases in accordance with the reservoir operations rule curves contained in Appendix E.

(C) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 19 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Stevens Creek Dam to approximately Highway 280) as available cold water supply will allow. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.5.2.2 Priority Barriers

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in the following table. SCVWD will be responsible for the costs of such barrier remediation.

Watershed	Barrier Code	Barrier Name
Stevens Creek	HL1	Moffet Fish Ladder
Stevens Creek	HL2	Evelyn Fish Ladder
Stevens Creek	HL3	Fremont Fish Ladder
Stevens Creek	HB10	Stream Gage 35

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers and will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Stevens Creek	HB25	Blackberry Farms Road Crossing	City of Cupertino
Stevens Creek	HB27	Blackberry Farms Irrigation Diversion	City of Cupertino

6.5.2.3 Portable Multi-Port Outlet. SCVWD will construct, install, and operate a portable, gravity-fed outlet at Stevens Creek Reservoir subject to the flow schedule described above. The outlet will be operated to manage the release of reservoir waters to maintain or enhance water temperature for steelhead trout rearing.

6.5.2.4 Hypolimneal Aeration. SCVWD will construct, install and operate a device on the downstream end of the reservoir outlet that will increase aeration of the reservoir outlet waters either through mechanical or passive methods.

6.5.2.5 Trap and Truck. SCVWD will undertake a feasibility study of trap-and-truck operations at Stevens Creek Reservoir regarding upstream and downstream migration of steelhead trout. The study will evaluate the suitability of spawning and rearing habitat for steelhead trout above the reservoir; the practicality of moving steelhead trout above the reservoir and achieving successful out-migration; and the potential effects of such movement on existing steelhead trout populations in Stevens Creek.

6.5.3 Phase Two Additional Measures. Subject to paragraph 6.1.2, Additional Measures will be implemented as needed to achieve the Overall Management Objectives. The proposed Additional Measures will be defined by the Phase 1 feasibility studies. The menu of Additional Measures includes:

(A) Remove or address Priority No. 2 barriers owned by SCVWD;

(B) Use recycled or other urban water to augment instream flows in Stevens Creek; and

(C) Implement a trap-and-truck operation to relocate adult steelhead trout into upper watershed habitat above Stevens Creek Reservoir.

6.5.4 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve the Overall Management Objectives.

6.6 Guadalupe River Watershed

6.6.1 Management Objectives

6.6.1.1 Overall Management Objectives. Implementation of the Agreement will restore and maintain healthy steelhead trout and salmon populations in the Guadalupe River watershed, by providing:

(A) Suitable spawning and rearing habitat for steelhead trout and salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River;

(B) Suitable spawning and rearing habitat for salmon below Calero and Almaden Dams to their confluence with Lake Almaden;

(C) Suitable spawning and rearing habitat for salmon in Los Gatos Creek from Camden Avenue to its confluence with Guadalupe River; and

(D) Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.6.1.2 Phase Two Management Objective. Subject to paragraph 6.1.2, the distribution of suitable fishery habitat for steelhead trout will be materially extended in Alamitos Creek up to an additional three miles (plus or minus) above Almaden Reservoir, or below either Calero Reservoir or Almaden Reservoir to its confluence with Lake Almaden, as determined feasible.

6.6.1.3 Phase Three Management Objective. Subject to paragraph 6.1.2, the suitable habitat below Calero and Almaden Reservoirs or above Almaden Reservoir will be extended.

6.6.2 Restoration Measures

6.6.2.1 Phase One Restoration Measures. In support of the Phase One Management Objectives described above, SCVWD will undertake the following measures.

6.6.2.1.1 Guadalupe River Main Stem

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in the following table. SCVWD will be responsible for the costs of such remediation.

Watershed	Barrier Code	Barrier Name
Guadalupe River	AB20	Alamitos Drop Structure
Guadalupe River	AB7	St. John Street Gage Weir

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers; however, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River	AB13	Hillsdale Avenue Bridge	City of San Jose
Guadalupe River	AB14	SJWC Low-Flow Crossing	San Jose Water Company

6.6.2.1.2 Guadalupe Creek

6.6.2.1.2.1 Flow Releases. Unless modified under paragraph 6.3, in each Agreement Year SCVWD will make flow releases from Guadalupe Reservoir as provided below.

(A) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 18 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Guadalupe Dam to approximately Camden Avenue) as available cold water supply will allow. SCVWD will make these releases for the purpose of supporting steelhead trout juvenile rearing. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E.

(B) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Guadalupe Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(C) February 1 to April 30. Pulse flow releases will be made from Guadalupe Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.2.2 Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers. However, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River (Pheasant Creek)	AAB1	Pheasant Creek Culvert	Unknown
Guadalupe River (Guadalupe Creek)	DB7	Old Dam	Private

6.6.2.1.3 Alamitos Creek

6.6.2.1.3.1 Flow Releases. Unless modified under paragraph 6.3, in each Agreement Year SCVWD will make flow releases from Almaden Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Almaden Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. Pulse flow releases will be made from Almaden Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.3.2 Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers. However, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River (Alamitos Creek)	CB5	Drop Structure	Private

6.6.2.1.3.3 Alamitos Creek Facilities Plan. SCVWD will complete an Alamitos Creek Facilities Plan. The plan will include two parts, stated below. SCVWD will implement the plan, after obtaining any necessary regulatory approvals.

(A) Almaden Dam. The plan will evaluate alternatives to provide unimpeded passage, both upstream and downstream, at the existing dam and reservoir; eliminate the warming of water temperature in the reservoir; and eliminate or minimize the methylation of mercury in the sediments behind the dam. If a feasible alternative exists, the plan will recommend action, including design and construction schedules. The flow schedules stated above will be amended as appropriate on the basis of such removal or modification of Almaden Dam.

(B) Almaden Lake. The plan will evaluate alternatives, including a bypass channel, to isolate Almaden Lake from Alamitos Creek and Guadalupe Creek, and to screen flow entering Almaden Lake to prevent entrainment and impingement of steelhead trout and salmon. If a feasible alternative exists, the plan will recommend action, including design and construction schedules. The plan will be completed no later than seven years and one day after the Effective Date.

6.6.2.1.4 Calero Creek. Unless modified under paragraph 6.3, SCVWD will make flow releases from Calero Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Calero Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. If it is safe to do so, pulse flow releases will be made from Calero Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. The SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.5 Los Gatos Creek. Unless modified under paragraph 6.3, SCVWD will make flow releases from Lexington Reservoir, Vasona Reservoir, or Vasona Pump Station, or any combination thereof, as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support chinook salmon spawning and egg incubation. SCVWD will make releases for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

6.6.2.2 Phase Two Measures. Subject to paragraph 6.1.2, Additional Measures will be defined by the Phase One feasibility studies. Following such studies, if the Overall Management Objectives have not been met, the AMT may undertake periodic review of reaches within Los Gatos Creek below Lexington Reservoir, to identify opportunities for Additional Measures that may be implemented in Phases Two and Three, specifically to increase access to spawning or juvenile rearing habitat. The menu of potential measures includes:

(A) Remove or address Priority No. 2 barriers owned by SCVWD.

(B) Use recycled or other urban water to augment instream flows in the Guadalupe main stem or its tributaries.

(C) Implement a trap-and-truck operation to relocate adult steelhead trout into upper watershed habitat above Almaden Reservoir.

(D) Construct a bypass channel or other modification necessary to isolate Alamitos Creek from Lake Almaden.

(E) Remove or modify Almaden Reservoir to allow for unimpeded access to upper watershed habitat.

6.6.2.3 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve Overall Management Objectives.

6.7 Phase Four - Continuing Actions

6.7.1 Maintenance of Flows. SCVWD will continue to provide instream flows in accordance with paragraphs 6.2 through 6.6, inclusive, in Phase Four as long as SCVWD diverts water under its Licenses and Permit, unless modified under paragraph 6.3.

6.7.2 Long-Term Monitoring. Long-term monitoring will continue as part of Phase Four. The cost of such monitoring will be limited to a financial expenditure by SCVWD of an amount not to exceed 5 percent of the annualized cost for measures implemented during Phases One, Two and Three.

6.7.3 Maintenance of Non-Flow Measures. Maintenance of facility improvements and other non-flow measures will continue as part of Phase Four. SCVWD's financial responsibility for facilities that have been completed prior to the end of Phase Three will be limited to the actual average annual cost for monitoring and maintenance incurred under this Agreement during Phase Three. For any facilities completed after the end of Phase Three, SCVWD's financial responsibility will be increased to include the actual average annual cost for monitoring and maintenance of those facilities for the first 10 (ten) years following completion.

ARTICLE VII
ADAPTIVE MANAGEMENT

7.1 Adaptive Implementation. SCVWD will implement the measures required in paragraphs 6.2 through 6.7, inclusive, in an adaptive manner in order to effectively mitigate any adverse impacts on the steelhead trout and Chinook salmon fisheries and their habitat, resulting from SCVWD's water supply facilities and operations.

7.2 Adaptive Management Team. SCVWD and the other Parties will form an Adaptive Management Team (AMT). The AMT will comprise a single representative from each Party. Membership in this team may be open to other interested persons, with the consent of SCVWD and the other Parties. In a written application for membership, each such person will demonstrate: (A) commitment to implement the Settlement, (B) willingness to dedicate the time and other resources necessary for effective participation in the Adaptive Management Program, and (C) ability to add value to the existing membership. The AMT will be formed on the Effective Date, and the rules and procedures of the AMT will be developed by the AMT within sixty (60) days of the Effective Date. The rules and procedures will address the manner in which the Parties will participate in the Implementation of the Adaptive Management Program. The Parties will review and consent to all of the plans, studies, reports, and other measures required by the Agreement. The members of the AMT will exercise best efforts to reach decisions by consensus. If they are unable to reach a consensus, disputes may be resolved in accordance with the provisions of Article IX.

7.3 Adaptive Management Program. Within one year of the Effective Date, and in consultation with the AMT, SCVWD will develop and thereafter implement an Adaptive Management Program. The purpose of the Adaptive Management Program is to maximize biological and physical benefits material to the Overall Management Objectives through the choice and implementation of the most cost-effective flow and non-flow measures. In making such decisions, the AMT will take into consideration: inter-annual and seasonal variation in hydrologic conditions, other constraints and limiting factors that affect achievement of the Overall Management Objectives, and monitoring results of the actual performance of measures already implemented, and opportunities for such measures to provide multiple benefits in the form of improvements to habitat for other fish, wildlife, and plant species and, more generally, the ecological conditions of the Three Creeks. The program will include:

(A) Measurable objectives consistent with the Phase One, Two, and Three management objectives for the steelhead trout and salmon fisheries and their habitats in the watersheds subject to the Agreement. The measurable objectives will relate to those habitat qualities impacted by SCVWD's facilities and operations, given the Parties' recognition that SCVWD is not responsible under this Agreement for other environmental conditions that may limit the population or distribution of these fisheries. Measurable objectives will be developed for flow measures, including maintenance of suitable water temperatures for summer steelhead rearing, performance of fish passage facilities, and other non-flow measures

(B) Operation and maintenance procedures and performance standards for individual facilities to contribute to the achievement of such objectives.

(C) Systematic monitoring of fish populations and actual habitat conditions affected by the measures implemented under this Agreement, to determine whether the measures are contributing to achievement of the measurable objectives. During each phase, and on the basis of these monitoring results, the AMT will also evaluate the performance of the entire program in maximizing habitat quality and availability for steelhead and salmon within the framework of this Agreement. The assessment will also evaluate the performance of the program at each phase in reducing or eliminating limiting factors affecting various life stages of steelhead and salmon directly attributable to SCVWD facilities and operations.

(D) Modification of flow and non-flow measures and other requirements of paragraphs 6.2 through 6.7, as appropriate to remedy any continuing impairment of a beneficial use.

7.4 Coordination of Efforts. The AMT will coordinate its efforts with other adaptive programs operating in the Three Creeks, as appropriate.

7.5 Annual Report. The AMT will publish and distribute to the Parties according to paragraph 10.1 an Annual Report that describes: (i) SCVWD's actions pursuant to the Settlement, (ii) monitoring results, and (iii) plans for the subsequent year, to the extent known.

ARTICLE VIII
FUNDING

8.1 Initial Funding

8.1.1 Provided that the implementation measures set forth in Article VI and summarized in Appendix B satisfy the requirements of paragraph 6.1.2, a maximum of $42 million will be made available by SCVWD in each of the Phases One, Two and Three in accordance with the agreed-upon cost accounting methodology. Appendix C describes the estimated budget for implementation of all measures contained in Phase One. Appendix D provides a detailed description of the cost accounting methodology that will be used under the Agreement.

8.1.2 Budget carryover will be allowed between the phases if the Parties agree that the Overall Management Objectives have not been met in the prior phase. However, unspent funds will not be carried over if the Parties agree that the Overall Management Objectives have been met and no Additional Measures are required under this Agreement.

8.2 Additional Funding. The Parties will make best efforts to secure additional funds where available and appropriate for the purpose of performing additional restoration of the Three Creeks. However, the acquisition of additional funds does not replace or diminish SCVWD's commitment to provide the funds described in paragraph 8.1.1 above.

8.3 No State or Federal Funding. As provided in paragraph 4.2.8 above, implementation of this Agreement by FWS or NMFS is subject to the Anti-Deficiency Act, 31 United States Code section 1341 and the availability of appropriated funds. Similarly, implementation of this Agreement by DFG is subject to the availability of appropriated funds. This Agreement is not intended and will not be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury or the State of California Treasury.

ARTICLE IX
DEFAULT, DISPUTE RESOLUTION AND REMEDIES

9.1 Dispute Resolution. Parties will exercise best efforts to reach consensus on all decisions arising under the Agreement, including (i) response to developments in regulatory review prior to the Effective Date; (ii) the Adaptive Management Program; and (iii) any proposed amendments to the Agreement. Unless the authorizing legislation of an agency (including any Party) with jurisdiction over a dispute resolved by this Agreement mandates a different procedure, all disputes among the Parties regarding this Agreement, including any disputes related to the consistency of the requested license and permit amendments by the SWRCB, will be addressed through non-binding ADR.

9.1.1 ADR Procedures. A Party claiming a dispute will give notice of the dispute within thirty (30) days of its actual knowledge of the event that gives rise to the dispute. The Parties participating in a dispute will devote the time, resources, and attention necessary to resolve the dispute expeditiously. If informal meetings do not resolve the dispute, the disputing Parties will select a neutral mediator to assist in further efforts. Unless otherwise agreed, the disputing Parties will implement promptly any final agreement reached, consistent with its applicable statutory and regulatory responsibilities.

9.1.2 Failure to Resolve Dispute. If the Parties fail to resolve the dispute in a manner satisfactory to them within 180 (one hundred and eighty) days of the initial notice of the dispute, any decision will be effective under the Agreement if it is supported by: (i) SCVWD and (ii) each regulatory agency with jurisdiction over the disputed measure. A Party that does not support the decision may be eligible to withdraw pursuant to paragraph 3.2.

9.1.3 Emergency Exception. In the event of an existing or threatened Emergency, a Party may immediately pursue its available remedies under this Agreement.

9.2 Default. The failure of any Party to perform its obligations under this Agreement, which failure continues for more than 90 (ninety) days after receipt of written notice from another Party, will constitute a default, unless the default is of a nature that it cannot be cured within 90 (ninety) days and the defaulting Party works continuously and diligently to remedy the default. Written notice by the other Party will be pursuant to paragraph 10.1, and will state the existence and the nature of such default.

9.3 Remedies

9.3.1 The Parties agree and recognize that the rights and obligations set forth in this Agreement are unique and of such a nature as to be inherently difficult or impossible to value in money damages. Accordingly, the Agreement will be enforceable in a court of equity by specific performance or injunction, and such specific performance or injunction will be the exclusive remedies available for alleged breach of this Agreement.

9.3.2 If the non-breaching Party fails to exercise or delays in exercising any right or remedy, the non-breaching Party does not thereby waive that right or remedy. Furthermore, no single or partial exercise of any right, power, or privilege precludes any further exercise of a right, power, or privilege granted by this Agreement or otherwise.

ARTICLE X
GENERAL PROVISIONS

10.1 Notice. Any notice under this Agreement will be written and distributed by first-class mail or comparable method of distribution and will be filed with the SWRCB. Any other notice will be provided by facsimile, electronic mail, or other reliable method of communication to the Parties. The list of authorized representatives of the Parties as of the Effective Date is attached as Appendix A. The Parties will provide notice of any change in the authorized representatives designated in Appendix A, and SCVWD will maintain the current distribution list of such representatives.

10.2 Governing Law. The Agreement will be construed under the laws of the State of California without giving effect to the principles of conflict of laws, with exclusive venue for all purposes proper only in the County of Santa Clara, State of California. The rights and duties of FWS and NMFS will be construed under the applicable federal authorities; and these agencies, by executing the Agreement, do not consent to the jurisdiction of a state agency or court. All activities undertaken pursuant to this Agreement will be in compliance with all applicable laws. Nothing herein will be construed as limiting the lawful discretion of FWS and NMFS in accordance with applicable laws.

10.3 Non-Severability. The paragraphs of this Agreement are not severable. This Agreement is executed on the understanding that each paragraph is in consideration of the others.

10.4 Good Faith. Wherever in this Agreement a Party has a right to approve an act of another Party, the former will exercise such discretion in good faith and according to reasonable standards. Similarly, where a Party is required to satisfy a condition or complete an act in a certain fashion or within a specified time period, that Party will pursue such objectives in good faith and make all reasonable efforts to accomplish the same; the other Party will likewise in good faith cooperate and assist the other Party in accomplishing this task to cause the consummation of the agreement as intended by the Parties and evidenced by this Agreement.

10.5 Other Instruments. Each Party will, wherever and as often as reasonably requested by another Party, execute, acknowledge and deliver or cause to be executed, acknowledged and delivered, any and all documents and instruments as may be necessary or proper in the reasonable opinion of the requesting Party.

10.6 Signatures - Counterparts. This Agreement may be initialed or signed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. The Parties authorize each other to detach and combine original signature pages and consolidate them into a single identical original. Any of such completely executed counterparts will be sufficient proof of this Agreement.

10.7. Successors and Assigns. This Agreement will be binding and will inure to the benefit of the Parties and their respective heirs, legal representatives, successors and permitted assigns, except as restricted by this Agreement.

10.8. Waiver. No waiver of any provision or consent to any action will constitute a waiver of any other provision or consent to any other action, whether or not similar. No waiver or consent will constitute a continuing waiver or consent or commit a Party to provide a waiver in the future except to the extent specifically stated in writing. Any waiver given by a Party will be null and void if the Party requesting such waiver has not provided a full and complete disclosure of all material facts relevant to the waiver requested. No waiver will be binding unless executed in writing by the Party making the waiver.

10.9 Authorizations. All individuals executing this Agreement and other documents on behalf of the respective Parties certify and warrant that they have the capacity and have been duly authorized to so execute the documents on behalf of the Party so indicated. Each signatory will hold the other Parties harmless from any and all damages, costs, attorneys' fees, and other expenses.

10.10 Advice of Attorneys. Each Party represents and warrants that in executing this Agreement, each has been advised by and has relied upon independent legal counsel, that the terms of this Agreement have been read and their consequences have been completely explained by said counsel, and that each Party fully understands the terms of the Agreement. Each Party further acknowledges and represents that, in executing this Agreement, it has not relied on any inducements, promises or representations made by any other Party or its representatives, except as otherwise stated in this Agreement.

10.11 No Third Party Rights. Nothing in this Agreement, whether express or implied, is intended to confer any rights or remedies on any person other than the Parties to this Agreement and their respective successors and assigns. Nothing in this Agreement is intended to relieve or discharge the obligations or liability of any third persons to any Party to this Agreement.

10.12 Entire Agreement and Amendment. With respect to the issues considered herein, this Agreement contains the entire understanding and agreement of the Parties. There have been no promises, representations, agreements, warranties or undertakings by any of the Parties, either oral or written, of any character or nature binding except as stated in this Agreement. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the Parties to this Agreement and by no other means. An amendment to the Agreement is binding only on the Parties that execute the Amendment. Each Party waives its right to claim, contest or assert that this Agreement was modified, cancelled, superseded or changed by any oral agreement, course of conduct, waiver or estoppel.

SANTA CLARA VALLEY WATER DISTRICT

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

CALIFORNIA DEPARTMENT OF FISH AND GAME

DATED 5-27-03, 20__ INITIALED CGW

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT

DATED 5-27-03, 20__ INITIALED _____

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

TROUT UNLIMITED

DATED 5/21/, 2003 INITIALED _____

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS

DATED 5/27, 2003 INITIALED RHC

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

CALIFORNIA TROUT, INC.

DATED 5/27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

URBAN CREEKS COUNCIL

DATED 5/27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

NORTHERN CALIFORNIA COUNCIL OF FEDERATION OF FLY FISHERS

DATED 5/21, 2003 INITIALED _____

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

EXHIBIT A

SCVWD Licenses and Permit in the Three Creeks

(1) Coyote Watershed

Coyote Creek		
License #007211	1937	24,560 AFY
License #002210	1937	5,000 AFY
License #007212	1951	71,100 AFY
License #010607	1965	20,180 AFY
Penitencia Creek		
Permit #006565	1946	3,500 AFY

(2) Guadalupe Watershed

Guadalupe Creek		
License #006943	1928	3,302 AFY
License #002206	1937	3,500 AFY
License #002837	1939	0.770 CFS
Los Gatos Creek		
License #011791	1928	9,090 AFY
License #006944	1937	1,684 AFY
License #005729	1950	30,000 AFY
Almaden Creek		
License #002205	1937	2,500 AFY
License #002209	1934	6,000 AFY
Calero Creek		
License #002208	1937	3,500 AFY

(3) Stevens Creek Watershed

Stevens Creek		
License #002207	1937	4,000 AFY

EXHIBIT B
Proposed SWRCB Form of Approval

A condition precedent to the implementation of the Agreement is that the SWRCB make findings, based upon substantial evidence, in a manner substantially similar to the findings set forth in Paragraph A herein ("Findings"); issue a decision or order approving the Agreement; and condition the Licenses and Permit described in Exhibit A in a manner substantially similar to the provision set forth in Paragraph B herein ("Request for Continuing Jurisdiction").

A. Findings

1. SCVWD in Compliance With All Applicable Laws. "SCVWD's diversion, storage and use of water under its existing SWRCB Licenses and Permit for Stevens Creek, Coyote Creek and Guadalupe Creek, as modified by Articles VI – IX of the Agreement and this Order, are in compliance with Article X, Section 2 of the California Constitution, the California public trust doctrine, and all related laws within the SWRCB's jurisdiction."

2. SCVWD May Divert, Store and Use Water Under its Licenses and Permit. "SCVWD's diversion, storage and use of water under its existing SWRCB Licenses and Permit as modified by Articles VI – IX of the Agreement and this Order, are in full compliance with such Licenses and Permit."

3. SWRCB Anticipates No Further Measures Beyond the Settlement. "SCVWD will make substantial improvements in facilities and operations to implement Articles VI - IX of the Agreement and this Order at great cost to SCVWD and its rate-payers. Based on this fact and Findings 1 and 2 above, and so long as SCVCWD complies with the Agreement and this Order, the SWRCB does not anticipate that SCVWD will be required to take additional measures related to its Licenses and Permit other than those required by the Agreement and this Order to address instream flow needs for Stevens Creek, Coyote Creek and Guadalupe River."

4. Resolution of Complaint and Compliance With All Applicable Laws. "SCVWD and all other Parties to the Agreement have agreed to resolve this matter by establishing those measures stated in Articles VI – IX of the Agreement, and by asking the SWRCB to exercise continuing jurisdiction over the District's Licenses and Permit as stated in Paragraph B below. We find that these requirements will maintain compliance of the District's operations with Article X, Section 2 of the California Constitution, the California public trust doctrine, and all related laws under the SWRCB's jurisdiction."

B. Request for Continuing Jurisdiction

Once every ten years following issuance of the SWRCB's Order, the SWRCB will request, from the Parties and any other interested party, an update as to the SCVWD's compliance with the Agreement and this Order and whether there has been a substantial change in circumstances that affects the SWRCB's finding made in Finding 1 above. If the SWRCB determines that SCVWD is in compliance and there has been no substantial change in circumstances that affects the SWRCB's finding made in Finding 1, the SWRCB will issue a supplemental order further finding and declaring that SCVWD's diversion, storage and use of water from Stevens Creek, Coyote Creek and Guadalupe Creek are in compliance with Article X, Section 2 of the California Constitution, the public trust doctrine and all related laws under the SWRCB's jurisdiction.

EXHIBIT C

ESA Compliance

Tthe form of NMFS and FWS approvals associated with Section 7, Section 10 and no surprises assurances of the ESA that must be obtained before the Settlement can be effective are as follows:

Activity	NEPA	CWA §404	ESA §7	ESA §10	No Surprises
Wetted Channel	Yes	Yes	Yes	No	No
Non-wetted Channel	Yes	No	No	Yes	Yes
Water Operations and Maintenance	Yes	No	No	Yes	Yes

This Table illustrates the Parties agreement that a Settlement activity that involves "wetted channel" will require NEPA review,a Clean Water Act Section 404 permit, and ESA-appropriate no-jeopardy, incidental take permission. Conversely, Settlement activities related to water operations and maintenancewill require NEPA review, but would not a Clean Water Act Section 404 permit and thus no Section 7 compliance. However, such activity could be covered under Section 10 through an HCP and a no-surprises assurance.

APPENDIX A

Authorized Representatives of the Parties Signatory to the Agreement

Stanley M. Williams
Santa Clara Valley Water District

Susan Moore
United States Department of the Interior, Fish and Wildlife Service

Richard McMurtry
United States Department of Commerce, National Marine Fisheries Service

Carl Wilcox
California Department of Fish and Game

Carle Hylkema
Guadalupe-Coyote Resource Conservation District

Richard Roos-Collins
Trout Unlimited

Richard Roos-Collins
Pacific Coast Federation of Fishermen's Associations

Mondy Lariz
California Trout, Inc.
San Francisco Bay Urban Creeks Council
Northern California Council of Federation of Fly Fishers

APPENDIX B
Proposed Schedule of Implementation

Phase 1 (Years 1-10)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates
District Owned Passage Barrier Removal
Non-District Owned Passage Barrier Removal
Gravel Replenishment
Riparian Cover In-Fill
Instream Habitat Enhancement
Geomorphic Functions Pilot Project
Hypolimneal Aeration Project
Multi-Port Outlet Project

Studies

Fish Habitat Restoration Plan
Geomorphic Functions Plan
ARWT Feasibility Study
Trap & Truck Feasibility Study
Alamitos Creek Feasibility Study
Coyote Valley Feasibility Study
Multi-Port Feasibility Study
Cherry Flat Reservoir Operations Plan
Coyote Percolation Facility Operations Plan

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 2 (Years 11-20)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 3 (Years 21-30)

Measures
Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 4 (Years 31-and beyond)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates
Maintenance of facilities and projects undertaken in Phases 1-3.

Adaptive Management

Biological Monitoring
Program Administration

APPENDIX C
Proposed Budget For Implementation

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Flow Elements											
Summer Rearing Flows		(The cost of implementing various flow elements will vary on an annual basis as a result of variation in annual hydrology.									$0
Winter Base Flows		As a result, no estimated costs have been provided.)									$0
Pulse Passage Flows											$0
Cherry Flat Cooperative Ops Plan	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Passage Barriers											
Priority #1 (District)	$1,460,000	$1,460,000	$1,460,000	$0	$0	$0	$0	$0	$0	$0	$4,380,000
Priority #1 (Non-District)	$0	$0	$500,000	$1,000,000	$1,000,000	$500,000	$0	$0	$0	$0	$3,000,000
Habitat Restoration											
Fish Habitat Restoration Plan	$50,000	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$100,000
Gravel Replenishment	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
Riparian Cover In-Fill	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
In-Stream Habitat Enhancement	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
Geomorphic Functions Plan	$0	$400,000	$400,000	$400,000	$0	$0	$0	$0	$0	$0	$1,200,000
Geomorphic Functions Pilot Projects	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$0	$0	$0	$3,000,000
Capital Improvement Projects											
Hypolimneal Aeration	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,000
Multi-Port Outlet	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,000
Feasibility Studies											
ARWT Feasibility Study	$0	$0	$0	$0	$0	$0	$1,500,000	$1,500,000	$1,000,000	$0	$4,000,000
Trap & Truck Feasibility Study	$0	$0	$0	$0	$0	$200,000	$200,000	$200,000	$0	$0	$600,000
Alamitos Creek Feasibility Study	$0	$0	$0	$0	$0	$500,000	$500,000	$0	$0	$0	$1,000,000
Coyote Valley Feasibility Study	$0	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0	$4,000,000
Multi-Port Feasibility Study	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$50,000
Adaptive Management											
Biological Monitoring		(The cost of implementing biological monitoring and other scientific studies associated with a long-term adaptive									
Program Administration		management program are not known at this time. Additional program development will be necessary to complete a									
Supplemental Studies		program budget.)									
Additional Measures											
Annual Total	$2,260,000	$2,510,000	$2,960,000	$2,000,000	$2,650,000	$3,800,000	$4,800,000	$3,300,000	$2,600,000	$600,000	$27,480,00

APPENDIX D
Cost Accounting Methodology

The following costs will apply towards the maximum funds permitted under paragraph 8.1.1.

1. **Capital Improvements:** actual costs including land, building, structures & improvements, and equipment, furnishings & fixtures associated with capitalized projects under the settlement.

2. **Water Supply Management:** actual costs to replace water lost to groundwater recharge as a result of implementing the Agreement when compared to normal or historic SCVWD operations in similar circumstances. These costs including water purchases and associated transmission costs.

   - SCVWD will document the water loss. Replacement water costs will be calculated based on multiplying the volume of replacement water by the District's unit cost of supply, as defined below and adjusted annually by the change in the Consumer Price Index.

   - The unit cost of supply will be based on $386 per acre-foot (in 1996 dollars, as estimated in the District's 1997 IWRP) and will increase annually by the change in the Bureau of Labor Statistics Consumer Price Index. The unit cost of supply in fiscal year 2002-03 is $428 per acre-foot (2001CPI of 177.1 divided by 1996 CPI of 156.9 or 1.11 times $386).

   - At the end of each 10-year period, if the unit cost of supply is less than 75 percent of the District's price for delivering treated water, the unit cost for the first year in the ensuing 10-period will be established at 90 percent of the price of treated water in the first year of the 10-year decade.

3. **Research and Environmental Studies:** actual costs associated with research, feasibility studies, and plan/program development.

   Each of the cost categories above may be comprised of labor, services, supplies & operating costs, overhead allocation, and debt service

   - Labor—includes direct salaries and employee benefits

   - Services, supplies, and operating costs—Includes, but not limited to, engineering services, repair & maintenance services, scientific & technical services, materials & supplies, travel, etc.

   - Overhead allocation—Includes the standard District overhead allocation

   - Debt service—Includes the interest charges on money borrowed to fund capital costs. The interest rate is based on the most recent long term borrowing cost (Series 2000A revenue bonds) of 5.1975 percent for a period not to exceed 30 years, or when the aforementioned debt is paid off by the district.

Note: Fish passage remediation costs spent prior to the Effective Date of this Agreement will apply toward the maximum amount provided in paragraph 8.1.1, in amounts as follows:

Project	Total Cost	Grants or Other Funding	Net Cost
Guadalupe River Fish Passage Projects – Hillsdale Ave Bridge; SJWC Low-Flow Road Crossing	$382,000	$178,000	$204,000
Stream Flow Station 35	$1,870,000	$167,000	$1,703,000
Total	$2,252,000	$345,000	$1,907,000

APPENDIX E
Reservoir Operations: Section 1

ELEMENTS COMMON TO ALL WATERSHEDS

Ramping Rates

Discharge rating curves indicating the outlet flow rate resulting from the outlet valve position over a range of storage conditions will be utilized for ramping at each of the reservoirs. The discharge rating curves will be reviewed annually and the results of the review will be included in the annual report on reservoir operations.

Reservoir flood releases, fisheries passage releases, and other planned (non-emergency) operations flow changes using the following criteria:

Flow Decrease of 50 cfs or Less

For decreases in flow of 50 cubic feet per second (cfs) or less, ramping is required when the total decrease in flow is greater than 50 percent of the total original flow. Ramping will occur over a period of up to 36 hours, with ramping performed in a maximum of four (4) increments with a target of 50 percent reduction in successive incremental flows. Adjustments in flow will be equally timed over the ramping period (i.e., at approximately 1 [start], 12, 24, and 36 hours for the maximum 36-hour ramping period). In addition, incremental flows will be adjusted to maintain a minimum change between successive increments of 2 cfs. The actual number of incremental adjustment, with a maximum of four (4), will be based on the following equation:

$$\text{Number of Increments} = 1/(\text{LOG}_{(\text{End Flow/Start Flow})}0.5)$$

Flow Decrease of 50 cfs or Greater

For decreases in flow greater than 50 cfs, ramping is required when the total decrease in flow is greater than 50 percent of the total original flow. Ramping will occur over a period of up to 72 hours, with ramping performed in a maximum of (7) increments with a target of 50 percent reduction in success incremental flows. Adjustments in flow will be equally timed over the ramping period (i.e., at approximately 1 [start], 12, 24, 36, 48, 60, and 72 hours for the maximum 72-hour ramping period). In addition, incremental flows will be adjusted to maintain a minimum change between successive increments of 2 cfs. The actual number of incremental adjustment with a maximum of seven (7) will be based on the following equation:

$$\text{Number of Increments} = 1/(\text{LOG}_{(\text{End Flow/Start Flow})}0.5)$$

Success Criteria

The success criteria for releases will be based on a 3 day rolling average of flow measurements conducted at the existing stream flow gages located just downstream of the dams. Flow measurements will be incorporated into the annual report.

Winter Base Flow Releases

Winter base flow releases will not be increased until there is adequate storage above a given curve which will allow for 5 days of releases at the higher release rate. Flow reduction will be made once the storage falls below a given curve.

Flood Rule Curves

Reservoirs are operated to storage flood rule curve which specify target maximum storage levels for specific dates between December 1 and April 30. When safe to do so, reservoir releases will be made to maintain maximum storage levels.

ELEMENTS SPECIFIC TO EACH WATERSHED

Coyote Creek Watershed

Imported water temporarily stored in Anderson Reservoir will not be included in volume calculations for habitat management programs.

Winter Base Flow

Anderson and Coyote Reservoirs will be operated to the rule curves as shown in Figure 1 and Figure 2 included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Anderson Reservoir from November 1 to April 30 to support steelhead trout and Chinook salmon. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 26 cfs or that flow rate required for recharge will be released past the upstream end of Coyote Canal. Releases to the raw water distribution system are also allowed when the reservoir storage is in this zone. As storage decreases, or if storage never reaches the 26 cfs winter base rule curve, a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 82 (SF–82) located downstream of Anderson Dam. The release determined from the combined storage may be made from Anderson Reservoir or the Santa Clara Conduit or some combination of both provided the total required release is made.

Pulse Flow

Pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout to reach suitable spawning habitat and for out-migration of juvenile steelhead and Chinook salmon. If the combined storage of Anderson Reservoir and Coyote Reservoir exceeds the pulse flow rule curve which is a combined storage of 80,000 acre-feet and when it is safe to do so, 50 cfs will be released from Anderson Reservoir through the outlet or the Anderson Hydroelectric Facility or some combination of both. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–82. Flood releases and spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered a pulse flow event.

Summer Rearing

Releases from Anderson Reservoir will be made from May 1 to October 31 to maintain a water temperature not to exceed 18 degrees C throughout as much of the cold water management zone as available cold water storage will allow. The cold water management zone is the reach of Coyote Creek from the outlet of Anderson Dam to the old Riverside Golf Course entrance. Between April 15 and 30 of each year, a temperature survey of Anderson Reservoir (and if required Coyote Reservoir) will be conducted to determine the available hypolimnetic volume with a temperature of 14 degrees C or less. If required, additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

Flow will be released through the Anderson Reservoir outlet or the Anderson Hydroelectric Facility outlet at a rate sufficient to maintain a continuous flow of water with a temperature less than 18 degrees C in the cold water management zone and a minimum flow of 1 cfs at the old golf course entrance. If there is not sufficient storage to satisfy this condition, the release will be equal to the total available cold water storage less estimated evaporation divided by 184 days.

If water from the Santa Clara conduit is 14 degrees C or less and the combined reservoir storage is adequate for summer releases, releases from the Santa Clara conduit to Coyote Creek may be substituted for releases from Anderson Reservoir. Storage in excess of the requirements outlined above may be released to Coyote Creek, Coyote Canal, or used for treated water supply.

Stevens Creek Watershed

The cold water management zone for Stevens Creek is approximately 3.8 miles in length from the base of the Dam to approximately Hwy 280 and is located upstream of Heney Creek.

Winter Base Flow

Stevens Creek Reservoir will be operated to the rule curves as shown in Figure 3 included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Stevens Creek Reservoir from January 1 to April 30 to support steelhead trout. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 16 cfs will be released. As storage decreases or if storage never reaches the 16 cfs winter base rule curve, winter releases will be reduced. Releases will be monitored and recorded at Stream Flow Station 44 (SF–44) located downstream of Stevens Creek Dam. From November 1 through December 31, flows will be equal to or greater than those releases made for the previous water year's summer cold water program.

Pulse Flow

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout and for out-migration of juveniles. If the storage in Stevens Creek Reservoir exceeds the pulse flow rule curve which is equal to the 16 cfs winter base rule curve plus 250 acre-feet, 50 cfs will be released from Stevens Creek Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–44. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Rearing

Summer releases from Stevens Creek Reservoir will be made from May 1 to October 31 to maintain the cold water management zone as available cold water storage will allow. Between April 15 and 30 of each year, a temperature survey of Stevens Creek Reservoir will be conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C in order to maintain a water temperature not to exceed a daily maximum of 22 degrees C throughout the cold-water management zone.

If the available cold water volume would produce a cold water flow release of less than 1 cfs throughout the summer months then releases will not be limited to the calculated cold water release and releases up to the recharge capacity of the system will be allowed.

Guadalupe Watershed

Guadalupe Creek

The cold water management zone for Guadalupe Creek is approximately 3.3 miles in length from the base of the Dam to Camden Avenue

Winter Base Flow

Guadalupe Reservoir will be operated to the rule curves shown in Figure 4, included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Guadalupe Reservoir from November 1 to April 30 to support steelhead trout and Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 11 cfs will be released. As storage decreases or if storage never reaches the 11 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 17 (SF–17) located downstream of Guadalupe Dam. Flows may be diverted at Mason Diversion Dam provided there is at least 4 cfs flowing through the fish ladder.

Pulse Flow

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout and for out-migration of juvenile steelhead and Chinook salmon. If the storage in Guadalupe Reservoir exceeds the pulse flow rule curve which is equal to the 11 cfs winter base rule curve plus 250 acre-feet, 50 cfs will be released from Guadalupe Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–17. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Rearing

Summer releases from Guadalupe Reservoir will be made from May 1 to October 31 to maintain the cold water management zone as available cold water storage will allow. Between April 15 and 30 of each year, a temperature survey of Guadalupe Reservoir will be conducted to determine the available hypolimnetic volume with a temperature of 14 degrees C or less. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed 18 degrees C throughout the cold-water management zone.

If the available cold water volume would produce a cold water flow release of less than 1 cfs throughout the summer months, then releases will not be limited to the calculated cold water release and releases up to the recharge capacity of the system will be allowed. In addition, releases to Guadalupe Creek for recharge from the Almaden Valley Pipeline located below Camden Avenue will be allowed.

Alamitos Creek

The management zone for Alamitos Creek is from Almaden Dam to Lake Almaden. There is no cold water management zone for Alamitos Creek.

Winter Base Flow

Almaden Reservoir will be operated to the rule curves shown in Figure 5 included at the end of this Appendix. The curves consist of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining storage for release during the rest of the year.

Flow will be released from Almaden Reservoir from November 1 to April 30 to support Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 14 cfs will be released. As storage decreases or if storage never reaches the 14 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 16 (SF–16) located downstream of Guadalupe Dam.

Pulse Flows and Water Transfers

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for juvenile Chinook salmon out-migration. If the storage in Almaden Reservoir exceeds the pulse flow rule curve which coincides with the transfer curve, 50 cfs will be released from Almaden Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–16. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

If the reservoir storage from December 1 to January 31 exceeds the transfer curve as shown in Figure 10, water will be transferred to Calero Reservoir via the Almaden-Calero Canal. Pulse flows and water transfers to Calero may take place simultaneously provided there is adequate storage above the curve to meet the two pulse flow per season requirement. Otherwise, if less than two pulse flow events have taken place for the season, pulse flows have priority over water transfers.

Summer Release Program

Cold water releases from Almaden Reservoir are not required for the May 1 to October 31 time period. Instead releases will be made in order to achieve a minimum pool storage of 400 acre-feet on December 1.

Calero Creek

The management zone for Calero and Alamitos Creek is from Calero Dam to Lake Almaden. There is no cold water management zone for Calero Creek.

Imported water temporarily stored in Calero Reservoir will not be included in volume calculations for habitat management programs.

Winter Base Flow

Calero Reservoir will be operated to the rule curves shown in Figure 6. The curves consist of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining storage for release during the rest of the year.

Flow will be released from Calero Reservoir from November 1 to April 30 to support Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 10 cfs will be released. As storage decreases or if storage never reaches the 11 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 13 (SF–13) located downstream of Calero Dam.

Pulse Flows

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for juvenile Chinook salmon out-migration. If the storage in Calero Reservoir exceeds the pulse flow rule curve, 50 cfs will be released from Calero Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–13. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Release Program

Cold water releases from Calero Reservoir are not required for the May 1 to October 31 time period. Instead releases will be made in order to achieve an emergency pool storage of 4,000 acre-feet on December 1.

Los Gatos Creek

The management zone objective for Los Gatos Creek is from the Camden Avenue drop structure to the confluence with Guadalupe River. There is no cold water management zone

for Los Gatos Creek.

Winter Base Flow

Lexington Reservoir will be operated to the rule curves shown in Figures 7 and 8. For storages above the low storage rule curve and below the water supply rule curve, releases will be made so that there is 3 cfs at Stream Flow Station 50 (SF–50) located at Lincoln Avenue. For storages above the water supply rule curve releases will be made at the flow rate indicated by the curves to be measured at SF–50 and for water supply.

Winter base flow will be released from either Lexington Reservoir, Vasona Reservoir, imported supplies or a combination of all three from November 1 to April 30. The specific flow rate will depend on the storage in Lexington Reservoir and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then releases will be made to obtain 13 cfs at stream gage 50. As storage decreases or if storage never reaches the 13 cfs winter base rule curve a reduced winter flow will be released.

Pulse Flows

Pulse flows will be obtained through uncontrolled flows or during spill events. No additional releases will be made for pulse flows.

Summer Release Program

Cold water releases from Lexington Reservoir are not required for the May 1 to October 31 time period. Instead releases for recharge and water supply will be made in an attempt to maintain the recreation pool and a minimum pool storage of 2000 acre-feet on December 1.

FIGURE 1
ANDERSON/COYOTE RESERVOIRS OPERATION RULE CURVES

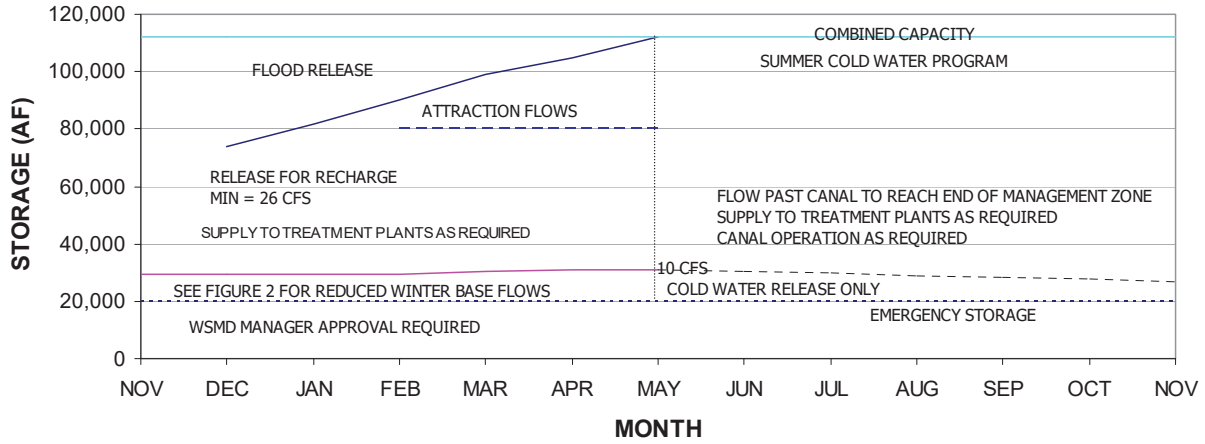


FIGURE 2
ANDERSON/COYOTE RESERVOIRS LOW STORAGE RULE CURVES

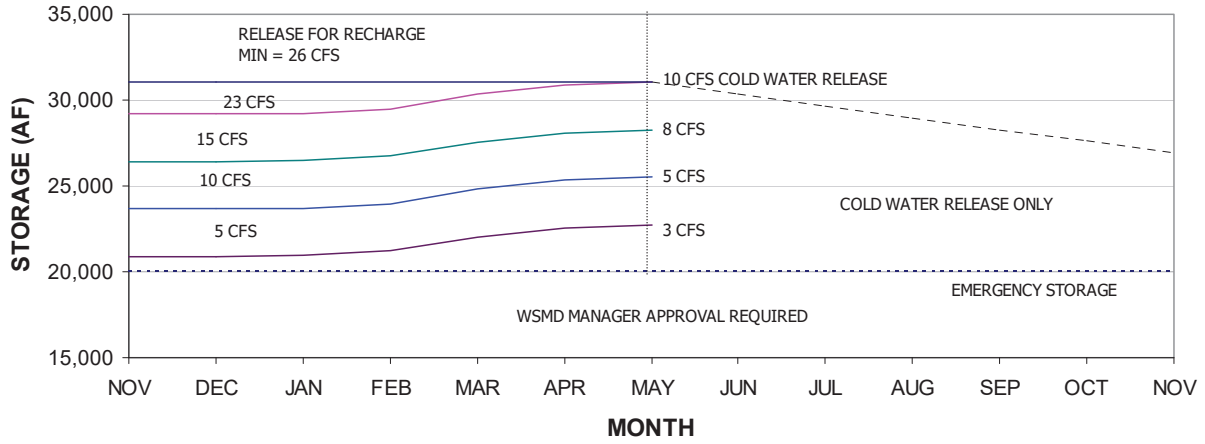


FIGURE 3
STEVENS CREEK RESERVOIR OPERATION RULE CURVES

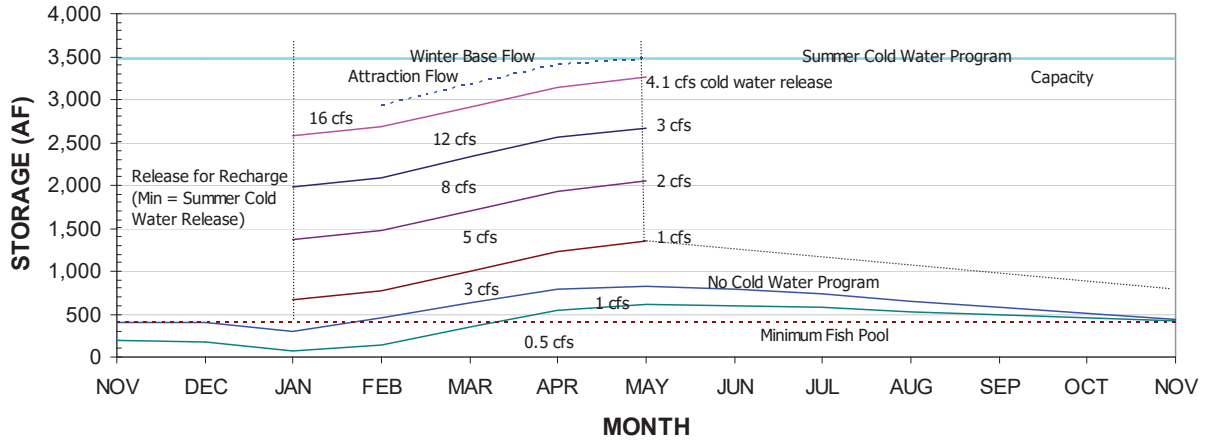
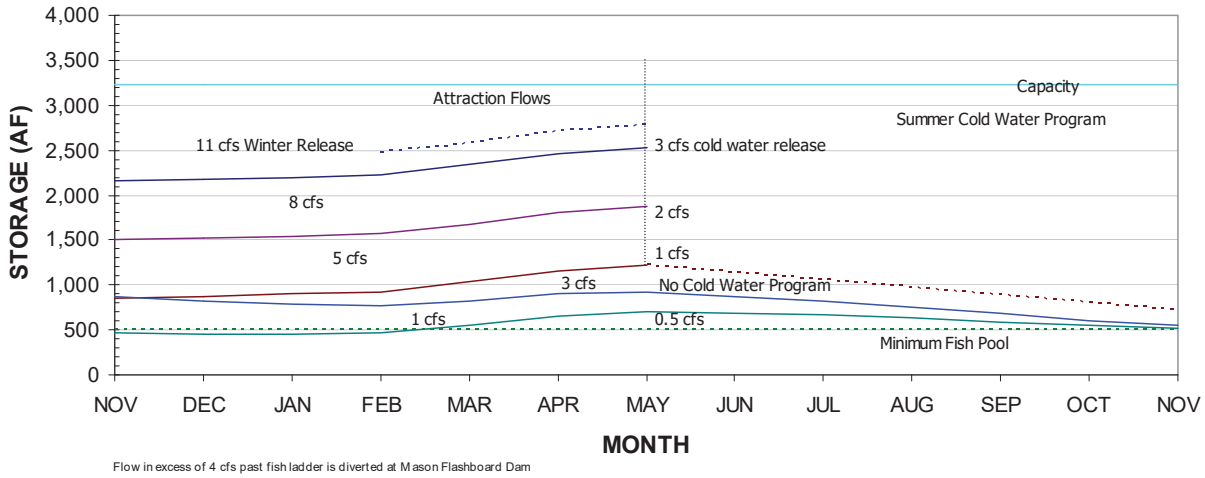


FIGURE 4
GUADALUPE RESERVOIR OPERATION RULE CURVES



Flow in excess of 4 cfs past fish ladder is diverted at Mason Flashboard Dam

FIGURE 5
ALMADEN RESERVOIR OPERATION RULE CURVES

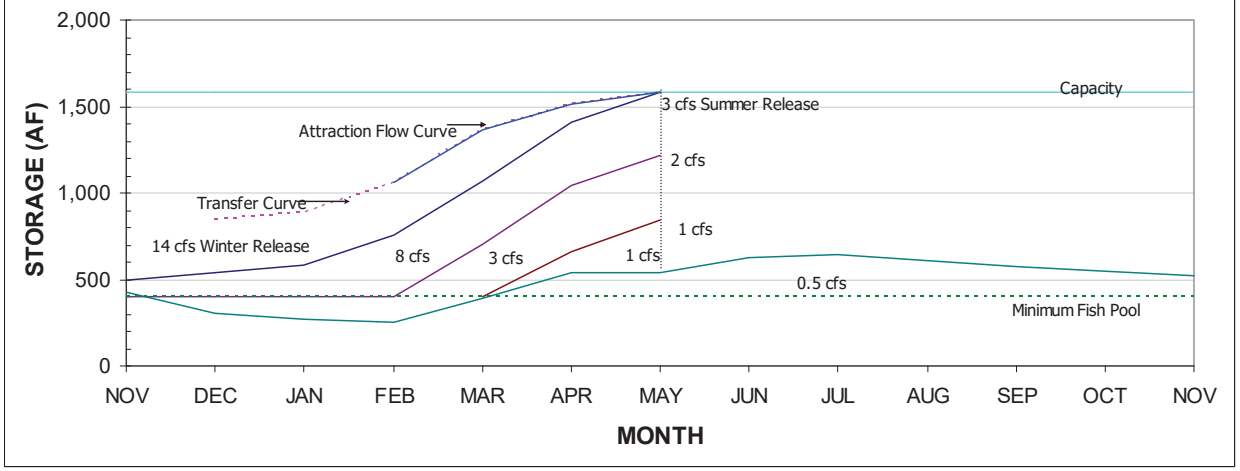


FIGURE 6
CALERO RESERVOIR OPERATION RULE CURVES

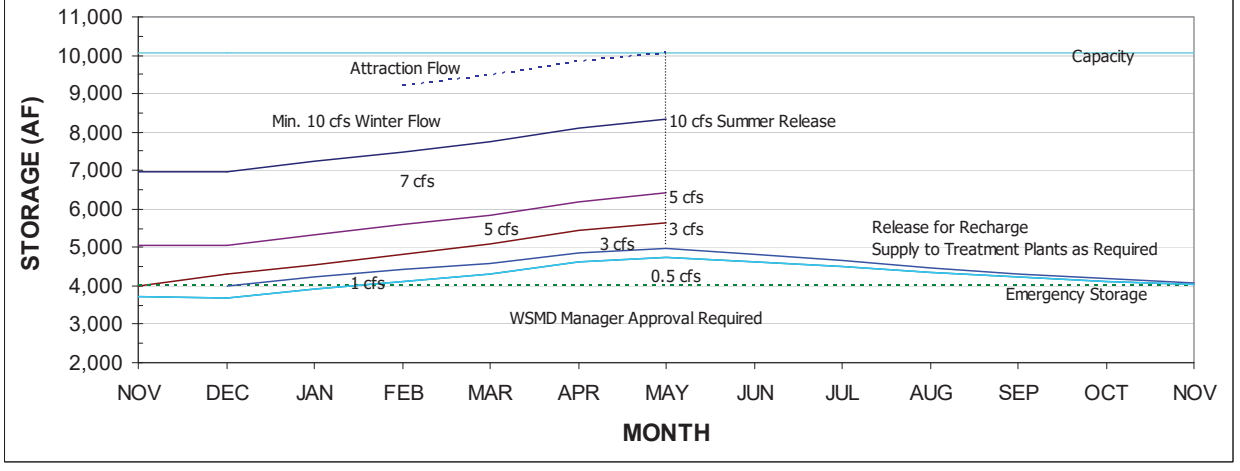


FIGURE 7
LEXINGTON RESERVOIR OPERATION RULE CURVES

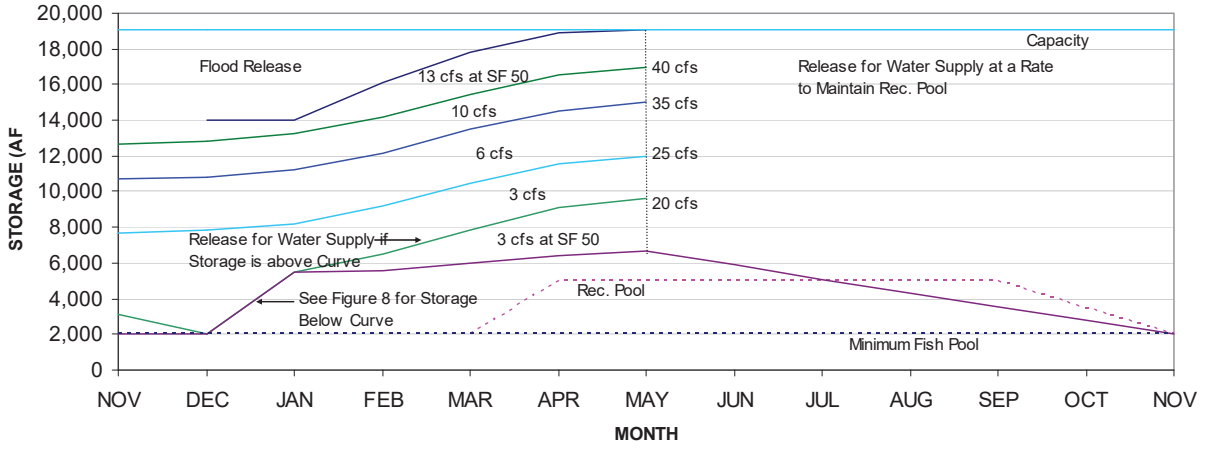
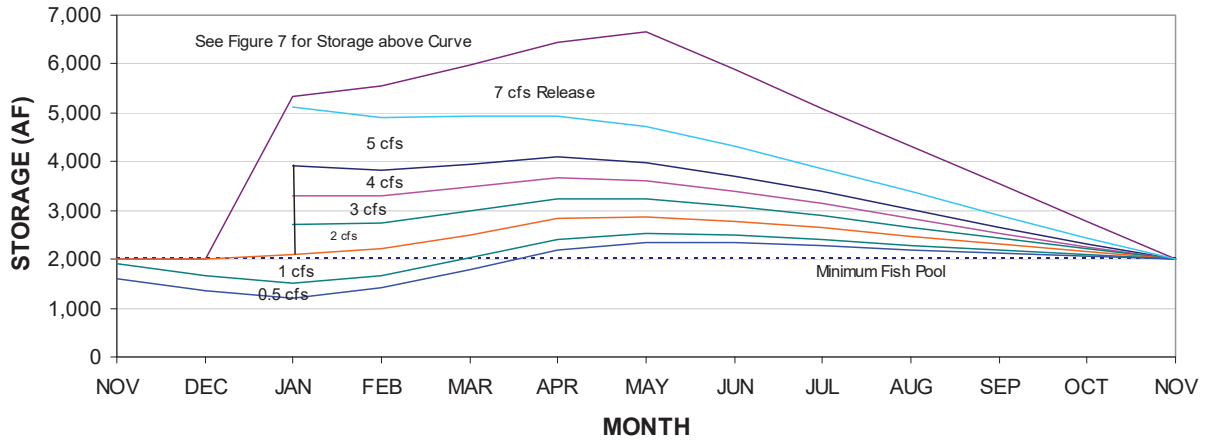


FIGURE 8
LEXINGTON RESERVOIR LOW STORAGE RULE CURVES



APPENDIX E
Reservoir Operations: Section 2

This section is intended to describe and further explain reservoir operations. It does not dictate or control how the reservoirs will be operated. The revised reservoir operations within the Coyote Creek Watershed, Stevens Creek Watershed and Guadalupe Watershed are described. More specifically, operations for Coyote and Anderson Reservoirs, Stevens Creek Reservoir, Guadalupe Reservoir, Almaden Reservoir, Calero Reservoir and Lexington Reservoir are discussed. Procedures will be developed for the daily operations of each of the reservoirs. These procedures will include tables to direct operations staff to release a specific flow rate based on the daily storage of the reservoir.

ELEMENTS COMMON TO ALL WATERSHEDS

Ramping Rates

Examples of flow ramping for decreases in flow of 50 cfs or less and flow decreases of 50 cfs or greater are included in Table 1 at the end of this TM. For example, if flood releases were made from Anderson Reservoir at 300 cfs and the desired end release following the completion of the flood release was 25 cfs, the table could be used to determine the number of increments and the associated flow releases. The table shows that for this example, 4 ramping increments are required and the following series of releases would be made at 12 hour increments: 300[begin], 161, 87, 47, 25[end]. The table also shows that the actual ramping factor is 0.46. In other words the flow is reduced by 46 percent between successive increments until the ending flow is reached. Specific beginning and ending release values can be input into the spreadsheet this table is derived from, and the incremental flow rates calculated.

Winter and Summer Time Periods

Reservoir operations are broken done into two time periods. Typically November 1st through April 30th is called the winter period and May 1st through October 31st is the summer period. This is the case for all reservoirs with the exception of Stevens Creek where the winter time period is from January 1st through April 30th.

Low Storage Rule Curves

If storage is extremely low, releases will be made based on the low storage rule curves. Under these conditions minimal releases will be made in order to maintain a wet creek for a short distance downstream of the reservoir. If inflow is poor and storage falls to these low levels, it is possible that 1 cfs or even 0.5 cfs would be released for both the winter and summer time periods. These curves are based on a 90 percent exceedence inflow probability and account for both estimated evaporation and the given release flow rate.

ELEMENTS SPECIFIC TO EACH WATERSHED

The following section includes information not already included in Appendix E on reservoir operations and flow requirements for each of the three watersheds and for the individual reservoirs within these watersheds.

COYOTE CREEK WATERSHED

The cold water management zone for Coyote Creek is approximately 6 miles in length from the base of the Dam to the old Riverside Golf Course entrance. This course has been renamed The Coyote Creek Golf Course. The limits of the cold water management zone are shown in Figure 1. The watershed area for Coyote and Anderson Reservoirs is 193 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the management zone is 9 mi^2.

Winter Base Flow Rule Curves

The winter base flow curves will be utilized to provide winter flows while maintaining cold water storage for the summer release program. The graduated winter base rule curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and emergency storage. The curve values for November 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage. The May 1 combined target storage is 31,050 acre-feet based on a combined emergency storage of 20,000 acre-feet, plus 5,050 acre-feet for summer cold water releases of 10 cfs from May 1 through October 31, plus 4,000 acre-feet of dead pool storage plus 2,000 acre-feet for evaporation.

STEVENS CREEK WATERSHED

The cold water management zone for Stevens Creek is approximately 3.8 miles in length from the base of the Dam to approximately Hwy 280 and is located upstream of Heney Creek. The limits of the cold water management zone are shown in Figure 2. The reservoir watershed area is 17.5 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the management zone is 2.5 mi^2. The uncontrolled watershed area between the dam and the end of the groundwater recharge zone is 4.7 mi^2.

Winter Base Flow Rule Curves

The graduated curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and minimum pool. The curve values for January 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage.

GUADALUPE WATERSHED

Figure 3 shows the Guadalupe Watershed.

GUADALUPE CREEK

The Guadalupe Reservoir watershed area is 6 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the cold water management zone is 7 mi^2. The cold water management zone for Guadalupe Creek is approximately 3.3 miles in length from the base of the Dam to Camden Avenue. The limits of the cold water management zone are shown in Figure 4.

Winter Base Flow Rule Curves

The graduated curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and minimum pool. The curve values for November 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage.

ALAMITOS CREEK

There is no cold water management zone for Alamitos Creek. The reservoir watershed area is 12 mi^2 and the approximate uncontrolled watershed between the dam and the confluence with Guadalupe Creek excluding the Calero Creek watershed is 17.3 mi^2. The Alamitos Creek to the confluence with Guadalupe Creek is shown in Figure 5.

CALERO CREEK

There is no cold water management zone for Calero Creek. The reservoir watershed area is 7 mi^2 and the approximate uncontrolled watershed between the dam and the confluence with Alamitos Creek is 5.4 mi^2. The Calero Creek to the confluence with Alamitos Creek is shown in Figure 6.

LOS GATOS CREEK

The reservoir watershed area is 38 mi^2 and the approximate watershed area between the dam and the confluence with Guadalupe River is 17 mi^2. The Los Gatos Creek to the confluence with Guadalupe River is shown in Figure 7.

STEVENS CREEK RESERVOIR EXAMPLE

The following example demonstrates how Stevens Creek Reservoir might be operated using the rule curves included in Appendix E during average, dry and wet year conditions.

Initial Storage

The example includes the assumption that Stevens Creek Reservoir in the year prior to the example year was full on May 1 and a full summer cold water program was in effect. With a full reservoir on May 1, approximately 5 cfs of cold water could be released during the cold water release period from May 1 to November 1. The estimated resulting November 1 storage would be 1,460 acre-feet taking into account summer releases and estimated losses due to evaporation. This is designated as point 1 on Figure 8 and is the starting point for

each of the inflow conditions.

Inflow Conditions

Thirty years of historic inflows were used to calculate monthly inflows for average year, dry year and wet year inflow conditions. These monthly inflows were then input into the model with the initial storage discussed above in order to determine monthly storages and release flow rates.

Average Year Inflow

For this example the monthly average year reservoir inflow for each month is based on a 50 percent exceedence probability. In other words, based on the historic monthly inflow into Stevens Creek half the time more inflow could be expected and half the time less could be expected.

Dry Year Inflow

Inflow with a 95 percent exceedence probability was used for dry year inflow in this example. In other words 95 percent of years considered were "wetter" or had larger inflows than the values used for the dry year.

Wet Year Inflow

Wet year inflow conditions were based on a 10 percent exceedence probability. Only 10 percent of the years considered had inflow equal to or greater than the values used for the wet year. The monthly inflow for the three inflow conditions are shown in Table 2 below:

TABLE 1
Monthly Inflows

Month	Average Year Inflow Condition – 50% Exceedence Probability (acre-feet)	Dry Year Inflow Condition – 95% Exceedence Probability (acre-feet)	Wet Year Inflow Condition – 10% Exceedence Probability (acre-feet)
Nov	120	5	859
Dec	491	25	2799
Jan	1022	25	4978
Feb	1279	127	5949
Mar	1259	194	4544
Apr	597	25	2733
May	252	25	1190
Jun	153	11	504
Jul	63	0	293
Aug	42	0	169
Sep	25	0	169
Oct	29	0	300

Average Inflow Year Operations

Figure 8 shows the reservoir storages under the average year inflow conditions described above with Stevens Creek Reservoir operated to the curves included in Appendix E.

As Figure 8 shows, on November 1 the storage is at **Point 1**. As indicated on the figure, releases for November and December are for recharge with a minimum release equal to the cold water program of the previous water year. Since the summer release was 5 cfs, the releases for November and December are also 5 cfs. Winter base releases start on January 1 for Stevens Creek Reservoir.

Inflows during December allowed the reservoir to reach storage of approximately 2,700 acre-feet on January 1 as indicated as **Point 2a** in Figure 8. The operation rule curves indicate that a release of 12 cfs is required.

Inflow continues to raise the reservoir storage and **Point 3a** designates when the winter base flow should be increased to 16 cfs. The flow increase is not actually made until there is adequate storage above the 16 cfs release curve which will allow for 5 days of releases at the higher release rate. In other words, if the 16 cfs curve is at 2,600 acre-feet the increase will not be made until the storage reaches 2,760 acre-feet (2600 + 16 x 5 x 1.98 = 2,760). This is designed to prevent oscillations between adjacent winter base flow releases. The daily procedures tables will include this calculation and will clearly indicate when flow regulations are required.

Pulse flows are required from February 1 to April 30. Since the reservoir storage on February 1 is above the attraction flow rule curve, designated as **Point 4a**, a pulse release of 50 cfs for 5 consecutive days is released. Following the pulse release, flow is ramped backed down to 16 cfs since the storage is no longer above the pulse flow rule curve. The starting and ending ramping values are plugged into the spreadsheet shown in Table 1 and the following ramping flow rates are released at 12 hour increments: 50[begin], 28, 16[end]. Ramping takes place over 2 increments and a 24 hour time period.

Inflows are not large enough to compensate for the pulse flow and maintain storage in the 16 cfs winter release zone. At **Point 5a** the winter release is reduced to 12 cfs. This flow rate is maintained for the remainder of the winter base flow time period.

Between April 15 and 30, a temperature survey of Stevens Creek Reservoir is conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. This corresponds to **Point 6a**. The depth to cold water is calculated from field measurements and the rating curve is used to determine the volume of cold water. Assuming a depth to cold water of 21 feet there should be enough cold water to release approximately 3 cfs from May 1 to Nov 1. The flow will be ramped down from 12 cfs to 3 cfs over 2 increments and a 24 hour time period with the following release rates: 12[begin], 6, 3[end]. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C and a daily maximum temperature of 22 degrees C throughout the cold-water management zone. Additional

reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

Dry Inflow Year Operations

Starting again with the initial reservoir storage as discussed above, the storage on November 1 is at **Point 1**. Since the summer release was 5 cfs for the assumed full reservoir initial conditions, the releases for November and December are also 5 cfs.

Low inflows for November and December cause the reservoir storage to decrease to approximately 900 acre-feet on January 1 as indicated as **Point 2d** in Figure 8. The operation rule curves indicate that a release of 5 cfs is required. Since it is very early in the water year, moderate winter base releases are maintained since significant inflows are still possible.

As the winter continues on, reservoir storage continues to decrease reaching **Point 3d** and winter releases are cut to 3 cfs. At **Point 4d**, release are reduced to 1 cfs and a cold water program is not going to be possible without some late season inflow. By May 1, inflows do not materialize and there is not adequate storage to maintain a cold water program through October 1. Releases are made based on the low storage rule curves designed to maintain a wet creek below the dam. Releases are reduced to 0.5 cfs at **Point 5d**.

Wet Inflow Year Operations

Starting again with the initial reservoir storage as discussed above, the storage on November 1 is at **Point 1**. Since the summer release was 5 cfs for the assumed full reservoir initial conditions, the releases for November and December are also 5 cfs.

Inflows during November and December allow the reservoir to reach a storage of approximately 3,100 acre-feet on January 1 as indicated as **Point 2w** in Figure 8. The operation rule curves indicate that a release of 16 cfs is required.

Inflow continues to raise the reservoir storage and **Point 3w** depicts the time when pulse flows should begin. Since the storage remains above the pulse flow curve a second pulse release of 50 cfs for 5 consecutive days is released. Additional pulse flow releases are not required since two have already been performed for the winter. Following the pulse releases, flow may be ramped back down to 16 cfs or flood releases may be performed, if appropriate. Assuming a 16 cfs release, the starting and ending ramping values are plugged into the spreadsheet shown in Table 1 and the following ramping flow rates are released at 12 hour increments: 50[begin], 28, 16[end]. Ramping takes place over 2 increments and a 24 hour time period.

Inflows continue to raise the reservoir storage and the reservoir begins to spill at **Point 4w**. A winter base flow of 16 cfs or greater is maintained by spill or through releases. The reservoir remains full until May 1.

Between April 15 and 30, a temperature survey of Stevens Creek Reservoir is conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. This corresponds to **Point 5w**. Assuming a depth to cold water of 21 feet there should be enough cold water to release approximately 5 cfs from May 1 to Nov 1. The flow will be ramped down from 16 cfs to 5 cfs over 2 increments and a 24 hour time period with the following release rates: 16[begin], 9, 5[end]. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C and a daily maximum temperature of 22 degrees C throughout the cold-water management zone. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

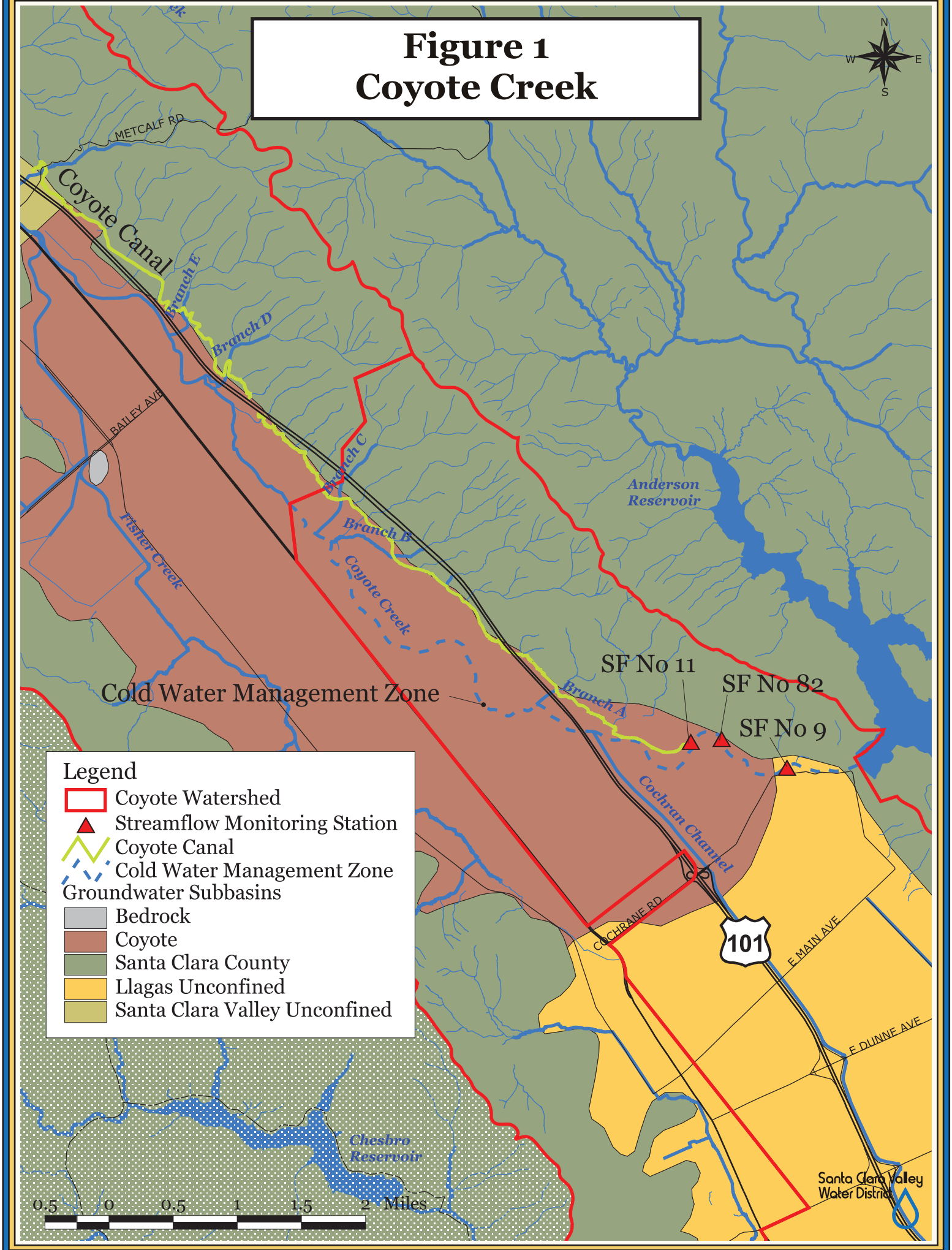
TABLE 2

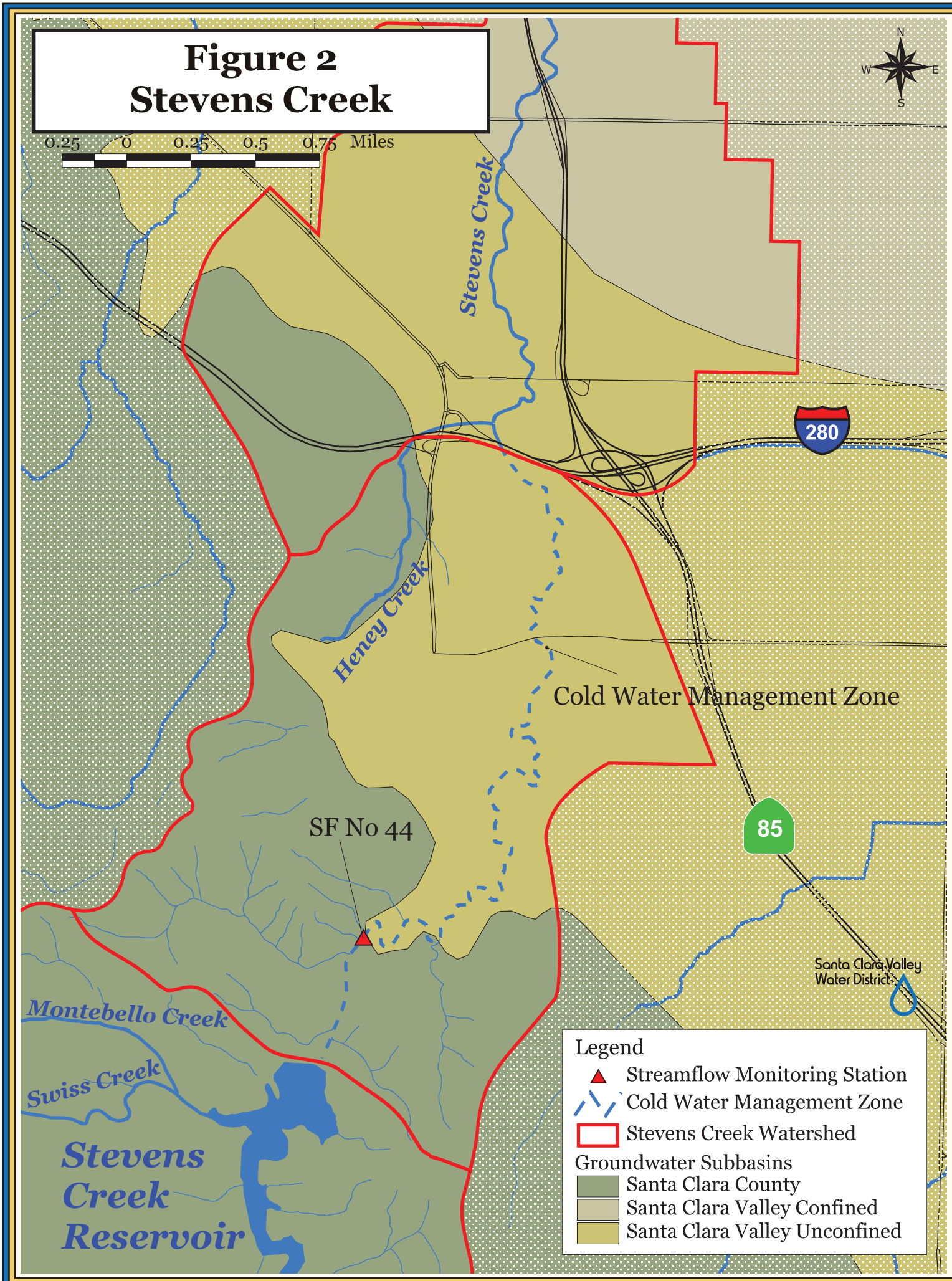
FLOW RAMPING

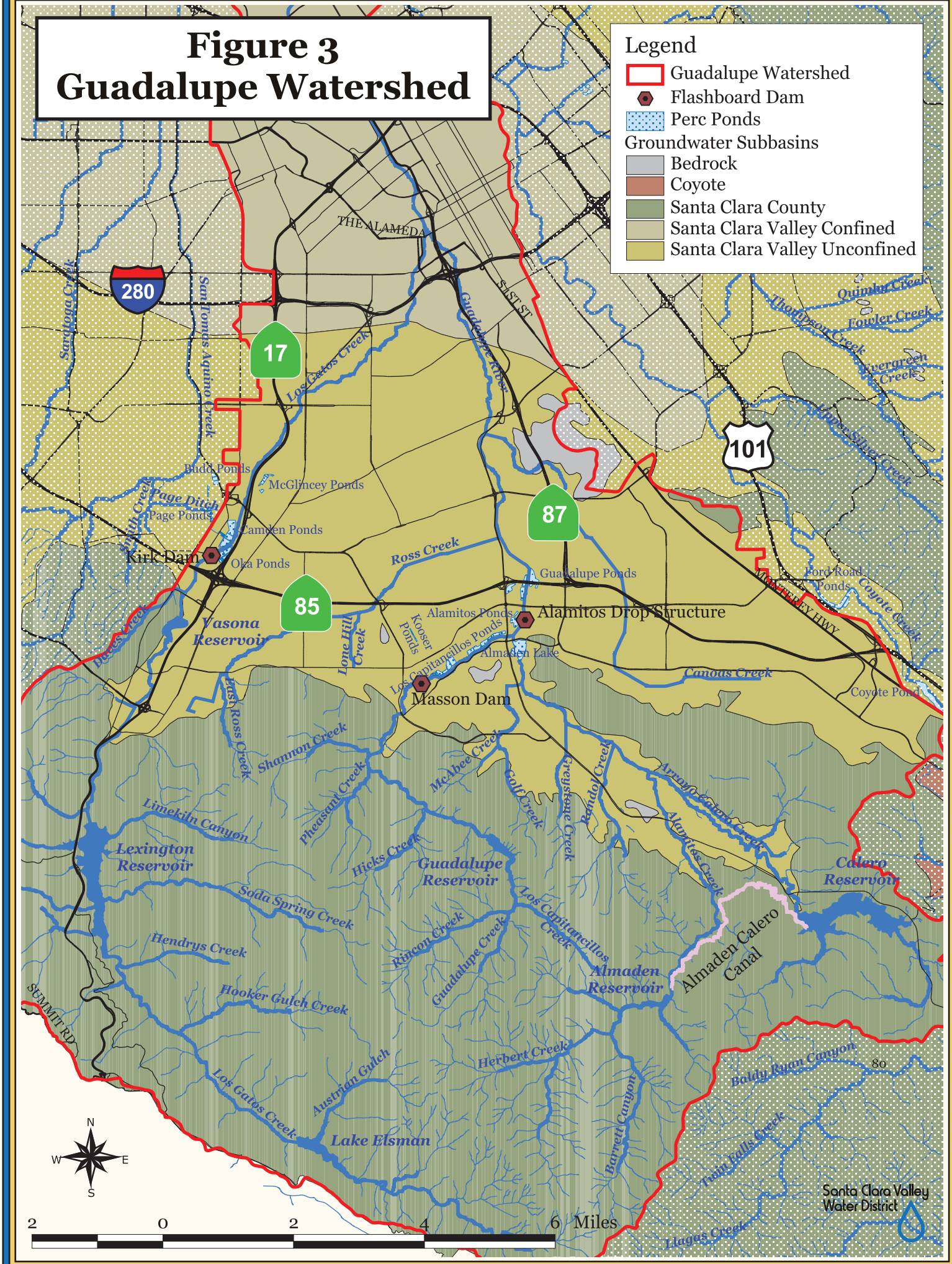
Target Ramping Factor 0.25
Flow Percent Criteria 50

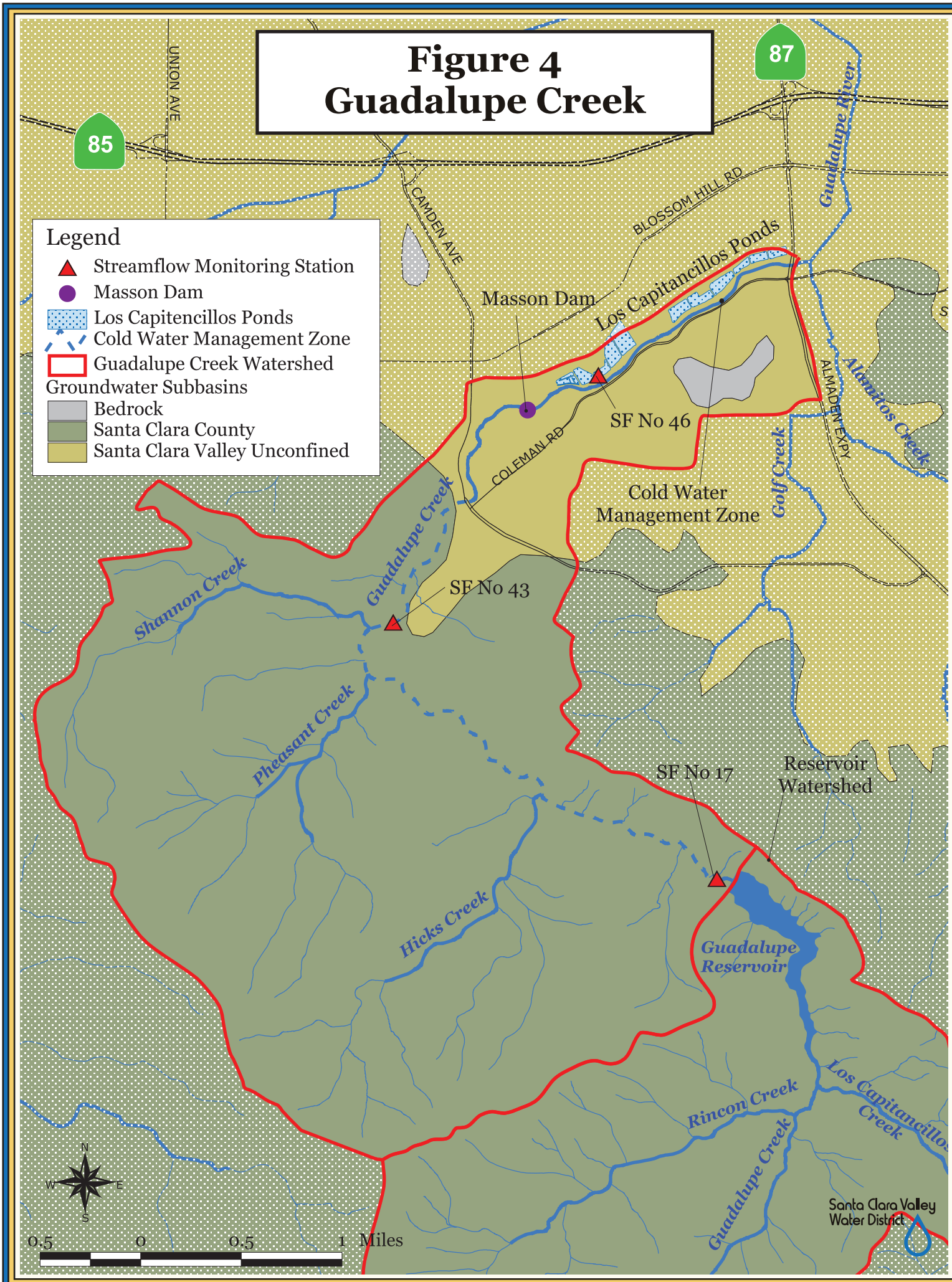
Begin	End	Change	Percent	Ramping	Calc. Increments	No. of Increments	Max Increments	No. of Increments	Act. Ramping Factor	Increments 0	1	2	3	4	5	6	7
300	250	50	17%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
300	200	100	33%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
300	100	200	67%	YES	3.8	4	7	4	0.24	300	228	173	132	100	-	-	-
300	25	275	92%	YES	8.6	9	7	7	0.30	300	210	147	103	73	51	36	25
300	10	290	97%	YES	11.8	12	7	7	0.38	300	185	114	70	43	26	16	10
100	80	20	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	60	40	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	50	50	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	49	51	51%	YES	2.5	3	7	3	0.21	100	79	62	49	-	-	-	-
100	20	80	80%	YES	5.6	6	7	6	0.24	100	76	58	45	34	26	20	-
50	40	10	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
50	25	25	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
50	16	34	68%	YES	1.64	2	4	2	0.43	50	28	16	-	-	-	-	-
50	10	40	80%	YES	5.6	6	4	4	0.33	50	33	22	15	10	-	-	-
50	5	45	90%	YES	8.0	9	4	4	0.44	50	28	16	9	5	-	-	-
20	15	5	25%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	12	8	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	10	10	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	8	12	60%	YES	3.2	4	4	4	0.20	20	16	13	10	8	-	-	-
20	6	14	70%	YES	4.2	5	4	4	0.26	20	15	11	8	6	-	-	-
20	4	16	80%	YES	5.6	6	4	4	0.33	20	13	9	6	4	-	-	-
20	2	18	90%	YES	8.0	9	4	4	0.44	20	11	6	4	2	-	-	-
10	8	2	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	7	3	30%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	6	4	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	5	5	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	4	6	60%	YES	3.2	4	4	4	0.20	10	8	6	4	-	-	-	-
5	4	1	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
5	3	2	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
5	2	3	60%	YES	3.2	4	4	4	0.20	5	2	-	-	-	-	-	-
5	1	4	80%	YES	5.6	6	4	4	0.33	5	3	1	-	-	-	-	-

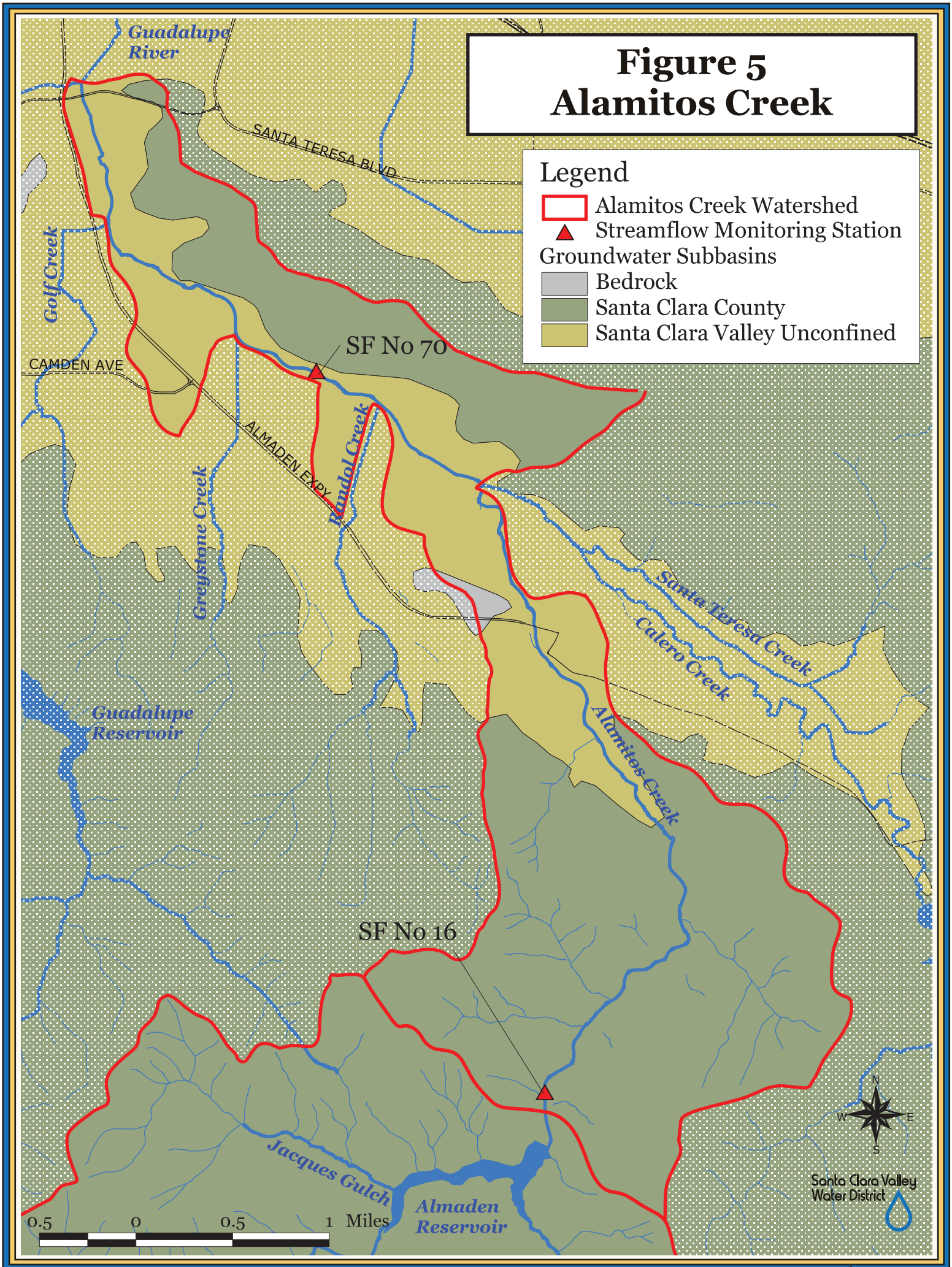
Rules:
Max of 7 increments for change in flow greater than 50 cfs otherwise a max of 4 increments
Minimum of 2 cfs change in flow b/w successive increments

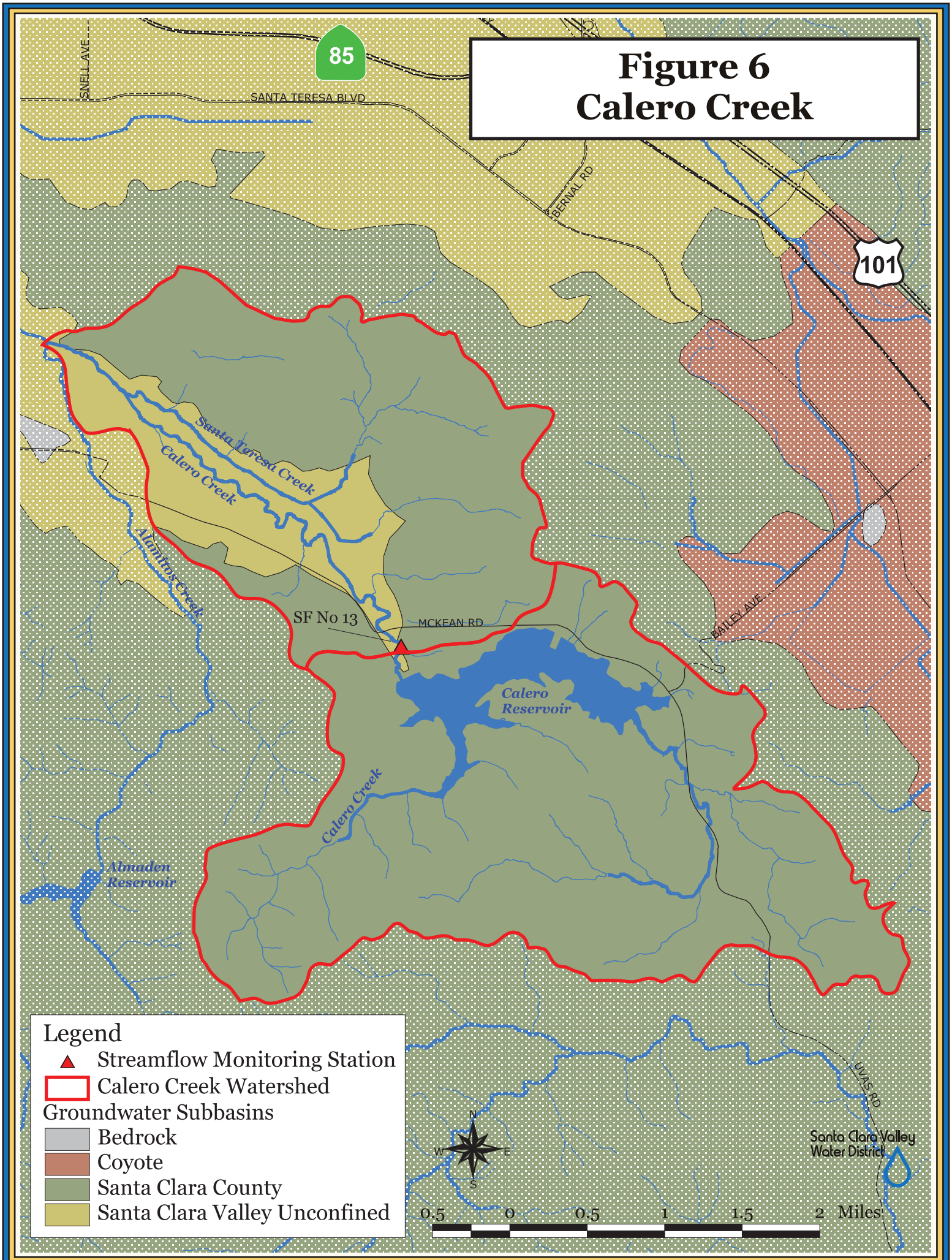

Figure 1
Coyote Creek
N
W
E
S
METCALF RD
Coyote Canal
Branch E
Branch D
Branch C
Branch B
Branch A
BAILEY AVE
Fisher Creek
Coyote Creek
Anderson Reservoir
Cold Water Management Zone
SF No 11
SF No 82
SF No 9
Cochran Channel
COCHRANE RD
101
E MAIN AVE
E DUNNE AVE
Chesbro Reservoir
Santa Clara Valley Water District
Legend
Coyote Watershed
Streamflow Monitoring Station
Coyote Canal
Cold Water Management Zone
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Llagas Unconfined
Santa Clara Valley Unconfined
0.5 0 0.5 1 1.5 2 Miles


Figure 2
Stevens Creek
0.25 0 0.25 0.5 0.75 Miles
N
W
E
S
Stevens Creek
280
Heney Creek
Cold Water Management Zone
SF No 44
85
Santa Clara Valley Water District
Montebello Creek
Swiss Creek
Stevens Creek Reservoir
Legend
Streamflow Monitoring Station
Cold Water Management Zone
Stevens Creek Watershed
Groundwater Subbasins
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined


Figure 3
Guadalupe Watershed
Legend
Guadalupe Watershed
Flashboard Dam
Perc Ponds
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined
280
17
85
87
101
THE ALAMEDA
SAN CARLOS ST
Guadalupe River
Los Gatos Creek
San Tomas Aquino Creek
Saratoga Creek
Quimby Creek
Thompson Creek
Fowler Creek
Evergreen Creek
Silver Creek
Budd Ponds
McGlincey Ponds
Page Ponds
Page Ditch
Camden Ponds
Oka Ponds
Kirk Dam
Ross Creek
Guadalupe Ponds
Ford Road Ponds
MONTEREY HWY
Coyote Creek
Alamitos Ponds
Alamitos Drop Structure
Vasona Reservoir
Lone Hill Creek
Kooser Ponds
Los Capitancillos Ponds
Almaden Lake
Canoas Creek
Coyote Pond
Masson Dam
Dukes Creek
East Ross Creek
Shannon Creek
McAbee Creek
Golf Creek
Graystone Creek
Randol Creek
Arroyo Calero Creek
Alamitos Creek
Limekiln Canyon
Lexington Reservoir
Pheasant Creek
Hicks Creek
Guadalupe Reservoir
Calero Reservoir
Soda Spring Creek
Hendrys Creek
Rincon Creek
Los Capitancillos Creek
Guadalupe Creek
Almaden Reservoir
Almaden Calero Canal
Hooker Gulch Creek
SUMMIT RD
Herbert Creek
Austrian Gulch
Los Gatos Creek
Lake Elsman
Barrett Canyon
Boldy Ranch Canyon
Trout Falls Creek
Llagas Creek
N
W
E
S
2 0 2 4 6 Miles
Santa Clara Valley Water District


Figure 4
Guadalupe Creek
Legend
Streamflow Monitoring Station
Masson Dam
Los Capitencillos Ponds
Cold Water Management Zone
Guadalupe Creek Watershed
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Unconfined
85
87
UNION AVE
CAMDEN AVE
BLOSSOM HILL RD
Guadalupe River
Masson Dam
Los Capitancillos Ponds
SF No 46
COLEMAN RD
ALMADEN EXPY
Alamitos Creek
Golf Creek
Cold Water
Management Zone
Guadalupe Creek
Shannon Creek
SF No 43
Pheasant Creek
SF No 17
Reservoir
Watershed
Hicks Creek
Guadalupe
Reservoir
Rincon Creek
Los Capitancillos
Creek
Guadalupe Creek
N
W
E
S
0.5
0
0.5
1 Miles
Santa Clara Valley
Water District


Figure 5
Alamitos Creek
Legend
Alamitos Creek Watershed
Streamflow Monitoring Station
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Unconfined
Guadalupe River
SANTA TERESA BLVD
Golf Creek
CAMDEN AVE
SF No 70
ALMADEN EXPY
Randol Creek
Greystone Creek
Santa Teresa Creek
Calero Creek
Alamitos Creek
Guadalupe Reservoir
SF No 16
Jacques Gulch
Almaden Reservoir
0.5 0 0.5 1 Miles
N
W
E
S
Santa Clara Valley Water District


Figure 6
Calero Creek
85
SNELL AVE
SANTA TERESA BLVD
BERNAL RD
101
Santa Teresa Creek
Calero Creek
Alamitos Creek
SF No 13
MCKEAN RD
BAILEY AVE
Calero Reservoir
Calero Creek
Almaden Reservoir
UVAS RD
Legend
Streamflow Monitoring Station
Calero Creek Watershed
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Santa Clara Valley Unconfined
N
W
E
S
Santa Clara Valley Water District
0.5 0 0.5 1 1.5 2 Miles

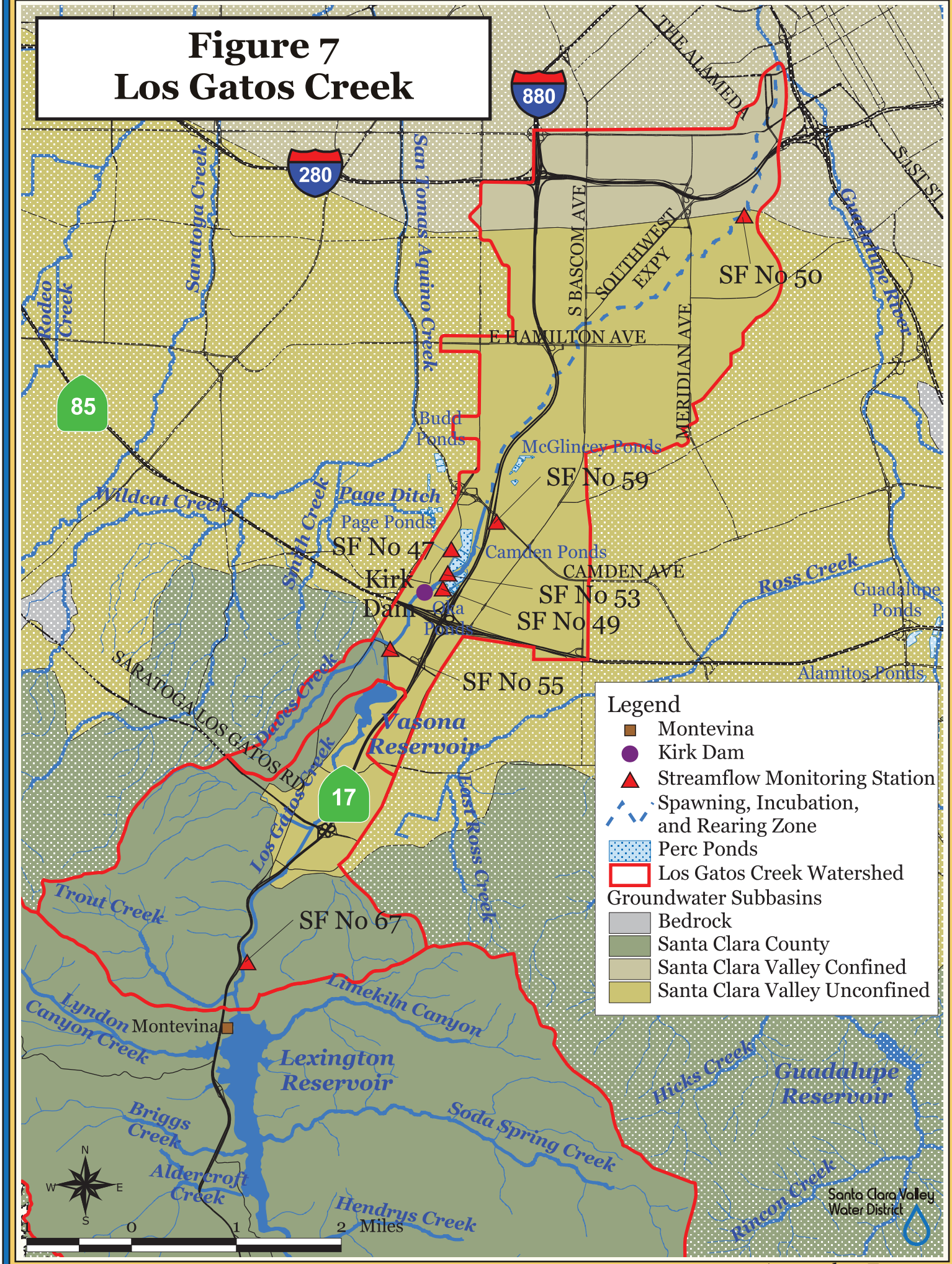

Figure 7
Los Gatos Creek
880
280
85
17
THE ALAMEDA
S 1ST ST
Guadalupe River
San Tomas Aquino Creek
Saratoga Creek
Rodeo Creek
S BASCOM AVE
SOUTHWEST EXPY
MERIDIAN AVE
E HAMILTON AVE
SF No 50
Budd Ponds
McGlincey Ponds
SF No 59
Wildcat Creek
Page Ditch
Page Ponds
SF No 47
Kirk Dam
Camden Ponds
CAMDEN AVE
SF No 53
SF No 49
Ross Creek
Guadalupe Ponds
Alamitos Ponds
SF No 55
SARATOGA LOS GATOS RD
Davis Creek
Vasona Reservoir
Los Gatos Creek
East Ross Creek
Trout Creek
SF No 67
Lyndon Canyon Creek
Montevina
Lexington Reservoir
Lumekiln Canyon
Briggs Creek
Aldercroft Creek
Soda Spring Creek
Hicks Creek
Guadalupe Reservoir
Hendrys Creek
Rincon Creek
Legend
Montevina
Kirk Dam
Streamflow Monitoring Station
Spawning, Incubation, and Rearing Zone
Perc Ponds
Los Gatos Creek Watershed
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined
N
W
E
S
0
1
2 Miles
Santa Clara Valley Water District

FIGURE 8
STEVENS CREEK RESERVOIR OPERATION RULE CURVES
EXAMPLE

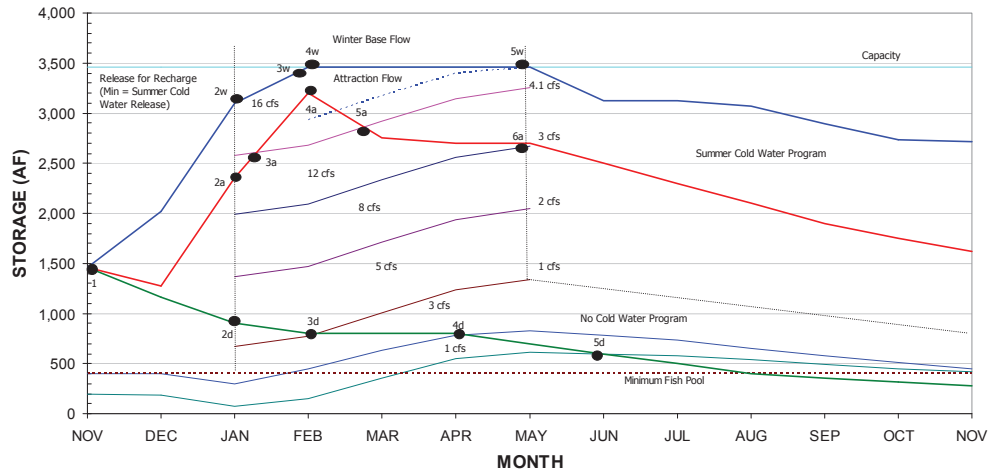
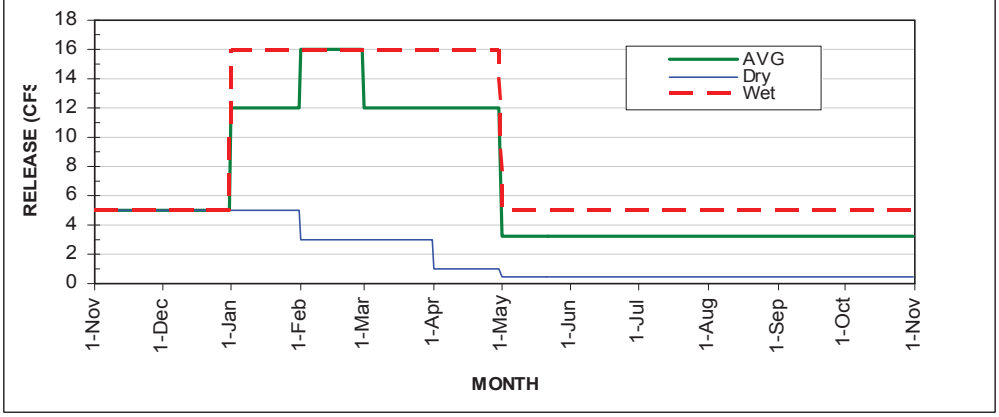


FIGURE 9
STEVENS CREEK RESERVOIR OPERATIONS EXAMPLE
RELEASES



Appendix B – Documentation of Completed Settlement Agreement Obligations

Appendix B – Documentation of Completed Settlement Agreement Obligations

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Appendix B – Documentation of Completed Settlement Agreement Obligations

Appendix B provides a list of those settlement agreements, by provision, that have been completed and their year of completion. Additional detail of the eight priority barrier remediation projects in the Stevens Creek and Guadalupe River Watershed is also provided.

Table B-1. Documentation of Completed Settlement Agreement Obligations

Settlement Agreement Provision	Measure / Sub-measure	Year
6.2.4.2	**Continuing Efforts to Improve Fish Passage - Overview**	
6.2.4.2	Blackberry Farm Vehicle Ford #1 HB24	2009
6.2.4.2	Blackberry Farm Vehicle Ford #3 HB26	2009
6.2.4.2	Fish Passage Assessment at Moffett Drop Structure (SCW D4 Project)	2016
6.2.4.2	Almaden Expy./ Confluence Critical Riffle Formation DB01	2005
6.2.4.2	Camden Ave. Sediment/Critical Riffle Formation DB03 (SMP)	2007
6.2.4.2	Masson Diversion Dam DB02 Fish Ladder and Screen	2000
6.2.4.2	Coyote Creek Percolation Pond Fish Ladder (Barrier FB26)	1999
6.2.4.2	Guadalupe Creek – Masson Fish Ladder (Barrier DB2)	2000
6.2.4.2	Guadalupe Creek – SF 43 Gauging Weir improvements (Barrier DB5)	2004
6.2.4.2	Guadalupe Creek U-Frame Channel Fish Ladder (Barrier DB6)	2008
6.2.4.2	Guadalupe River – Highway 880 Weir Retrofit (Barrier AB3)	2014
6.2.4.2	Guadalupe River – removal of the Old Julian Street Bridge (Barrier AB6)	2003
6.2.4.4.2	**Implement Geomorphic Pilot Projects**	
6.2.4.4.2	Stevens Creek Watershed – Blackberry Farm Geomorphic Restoration	2009
6.2.4.4.2	Adopt Bank Stabilization Guidelines to Maintain or Enhance Geomorphic Function	2014
6.4.2.1.2 (A)	**Priority Barriers Coyote Creek – District Owned**	
6.4.2.1.2 (A)	Overfelt Recharge Pond Diversion (Mabury Diversion Barrier GB2)	1998
6.4.2.1.2 (A)	Upper Penitencia Recharge Pond Diversion (Noble Fish Ladder and Screen Barrier GB3)	1999
6.5.2.2 (A)	**Priority Barriers Stevens Creek – District Owned**	
6.5.2.2 (A)	Evelyn Fish Ladder Remediation (Barrier HL2)	2016
6.5.2.2 (A)	Stream Gage 35 Remediation (Barrier HB10)	2002
6.5.2.2 (B)	**Priority Barriers Stevens Creek Owned by Others**	
6.5.2.2 (B)	Blackberry Farms Irrigation Diversion (Barrier HB27; City of Cupertino, Owner)	2009
6.5.2.2 (B)	Blackberry Farms Road Crossing HB25 (City of Cupertino, Owner)	2009
6.5.2.4	**Hypolimneal Aeration**	
6.6.2.1.1 (A)	**Priority Barriers Guadalupe River – District Owned**	
6.6.2.1.1 (A)	Alamitos Drop Structure (Barrier AB20)	2001
6.6.2.1.1 (A)	St. John Street Gage Weir (Barrier AB7)	2004
6.6.2.1.1 (B)	**Priority Barriers Guadalupe River – Owned by Others**	
6.6.2.1.1 (B)	Hillsdale Avenue Bridge (Barrier AB13; City of San Jose, Owner)	2000
6.6.2.1.1(B)	SJWC Low-flow Crossing (Barrier AB14; San Jose Water Company, Owner)	1998

Appendix B – Documentation of Completed Settlement Agreement Obligations

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Valley Water

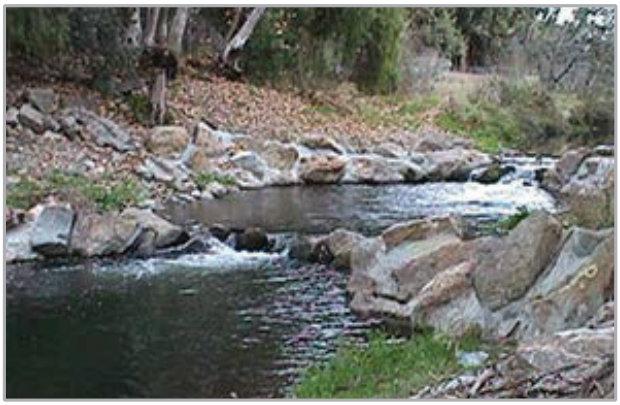
PRIORITY BARRIERS REMEDIATED

Stevens Creek and Guadalupe River Watersheds

The Settlement Agreement identifies eighteen physical barriers to fish passage as priority locations for remediation measures. Valley Water remediated eight of these physical barriers to fish passage in the Stevens Creek and Guadalupe River watersheds in advance of the Fish Habitat Restoration Plan. The following fact sheets detail these eight barrier removal projects:

- Blackberry Farms Geomorphic Restoration (two priority barriers removed)
- Evelyn Fish Ladder
- Stream Gage 35 Remediation
- Hillsdale Avenue Bridge Improvements
- Alamitos Drop Structure Fish Ladder Installation
- St. John Street Gage Weir Barrier Removal
- San Jose Water Company Low Flow Crossing Barrier Removal





Valley Water

STEVENS CREEK:
Blackberry Farms Geomorphic Restoration

Location:

Stevens Creek from Stevens Creek Boulevard to Blackberry Farm Park at San Fernando Avenue in Cupertino.

Problem:

Three in-stream sites of low water flow crossings and one stream diversion obstacle that created barriers to fish migration. These also caused stream bed and bank erosion downstream.

Solution:

In 2013, the City of Cupertino and Valley Water restored this reach of Stevens Creek with 2,100 feet of geomorphic improvements, including:

- Removing four fish migration barriers.
- Adding a new clear span bridge.
- Removing concrete lining the channel.
- Realigning and widening the channel.
- Installing instream habitat features for fisheries, such as boulders, gravels, etc.



Before



After

Valley Water

STEVENS CREEK:
Evelyn Fish Ladder

Location:

Stevens Creek downstream of Evelyn Avenue in Mountain View.

Problem:

The existing Denil fish ladder under the Union Pacific Railroad bridge was a partial barrier to fish migration due to debris build-up at the bridge and blockages within the fish ladder.

Solution:

In 2016, the existing Denil fish ladder was removed. A reinforced concrete and gravel low-flow channel, rock side weir, which is a small dam-like structure, and grade control structures were installed to facilitate fish passage.



Before



After

Valley Water

STEVENS CREEK:
Stream Gage 35 Remediation

Location:

Stream Gage 35 on Stevens Creek is approximately 150 feet upstream of the Highway 85 bridge crossing in Sunnyvale.

Problem:

This site had several obstructions to fish passage, including a concrete weir for the stream gage and two drop structures. Fish were required to navigate three jumps onto concrete slabs with only 1-2" of water between each jump.

Solution:

In 2002, the stream gage was relocated to the east bank and a series of five V-shaped concrete structures that included 9" jump heights and 48" deep pools were installed for easier fish passage.



Before



After

Valley Water

GUADALUPE RIVER:
Hillsdale Avenue Bridge Improvements

Location:

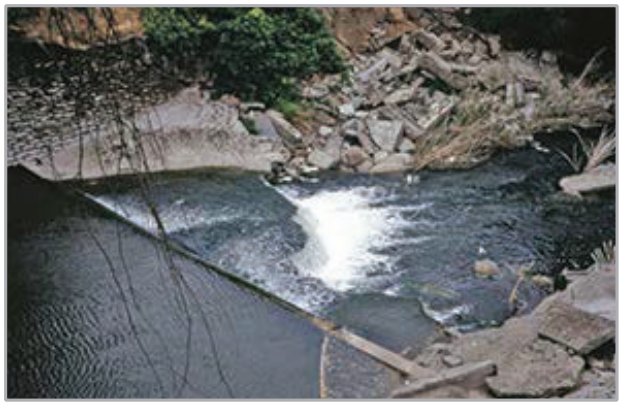
Guadalupe River at Hillsdale Avenue in San José.

Problem:

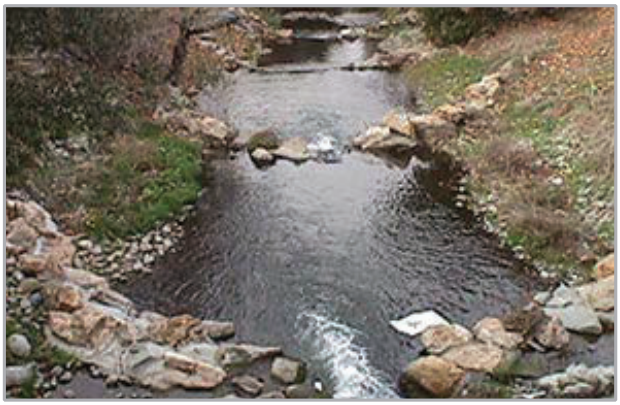
The concrete lip on the bridge and deteriorated stream conditions downstream were impeding fish from swimming upstream.

Solution:

In conjunction with bridge improvements made by the City of San José in 2001, steel piles, concrete, and other temporary bridge framework structures were removed to improve stream conditions. Boulder structures were used to construct a series of step-pools to adjust for the slope changes and make it easier for fish passage.



Before



After

Valley Water

GUADALUPE RIVER:
Alamitos Drop Structure Fish Ladder Installation

Location:

Guadalupe River between Coleman Road and Blossom Hill Road in San José.

Problem:

The 13-foot tall drop structure presented an impassable barrier to fish.

Solution:

In 1999, a fish ladder and screened water intake were constructed adjacent to the existing drop structure, which enabled fish passage around the structure. In 2001, a slot was also cut to prevent fish from being trapped at the base of the drop structure. Seven years of monitoring have showed that these improvements provide passage for steelhead and Chinook salmon.



Before



After

Valley Water

GUADALUPE RIVER:
St. John Street Gage Weir Barrier Removal

Location:

Guadalupe River upstream of the West Saint John Street Bridge in San José.

Problem:

The existing weir, which is a small dam-like structure, and stream gage included a single abrupt drop. This created a barrier to fish migration due high water velocities unfavorable to fish passage.

Solution:

In 2004, a series of improvements to the bottom of the stream bed replaced the existing weir, including stepped riffles that provided habitat, enhanced fish passage and improved channel stability. These fish habitat improvements included small pools, boulders, and instream large wood elements.



Before



After

Valley Water

GUADALUPE RIVER:
San Jose Water Company Low Flow Crossing Barrier Removal

Location:

Guadalupe River between Branham Lane and Hillsdale Avenue in San José.

Problem:

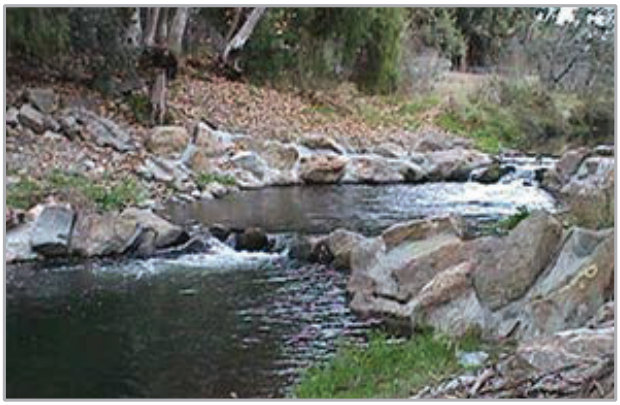
The San Jose Water Company has an instream vehicle crossing location on Guadalupe River during low stream flows. This site has deteriorated over time and developed a five-foot drop below the asphalt, which has made passage for fish challenging.

Solution:

In 1998, the crossing was completely removed and replaced by three boulder structures, which has improved stream depths, reduced stream velocities, and lessened jump heights to better enable fish passage.



Before



After

Appendix C – Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020

Appendix C – Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020

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APPENDIX C

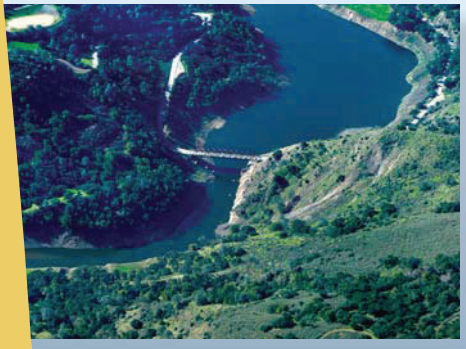
THE 2012 SAFE, CLEAN WATER AND NAUTRAL FLOOD PROTECTION PROGRAM REPORT

THE 2020 SAFE, CLEAN WATER AND NATURAL FLOOD PROTECTION COMMUNITY PREFERRED PROGRAM REPORT

Safe, Clean Water and Natural Flood Protection













A 15-year program to:

- Ensure a safe, reliable water supply
- Reduce toxins, hazards and contaminants in waterways
- Protect water supply and dams from earthquakes and natural disasters
- Restore wildlife habitat and provide open space
- Provide flood protection to homes, schools and businesses

Santa Clara Valley Water District

July 24, 2012

Safe, Clean Water and Natural Flood Protection



District Board of Directors*

(from left) **Tony Estremera**, District 6
Patrick Kwok, Vice Chair, District 5
Richard P. Santos, District 3
Donald F. Gage, District 1
Linda J. LeZotte, Chair, District 4
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* To identify your director please visit valleywater.org.
To reach a Board member please call 408/630-2277.

Message from the CEO

Santa Clara Valley Water District
5750 Almaden Expressway,
San Jose, CA 95118
valleywater.org
408/265-2600

***The Santa Clara Valley Water District** manages an integrated water resources system that includes the supply of clean, safe water, flood protection, and stewardship of streams on behalf of Santa Clara County's 1.8 million residents.*

The District effectively manages ten dams and surface water reservoirs, three water treatment plants, a state-of-the-art water quality laboratory, nearly 400 acres of groundwater recharge ponds and more than 275 miles of streams.

We provide wholesale water and groundwater management services to local municipalities and private water retailers who deliver drinking water directly to homes and businesses throughout Santa Clara County.

***The mission of the District** is to provide for a healthy, safe and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective and environmentally sensitive manner for current and future generations.*



You are holding in your hands the result of more than 18 months of community collaboration to create a long-term program that ensures Safe, Clean Water and Natural Flood Protection for Santa Clara County. As a service provider for the entire county, we at the Santa Clara Valley Water District know that the future of our families, neighborhoods and businesses depends on water and how well we manage it.

With the support of the community, the current Clean, Safe Creeks and Natural Flood Protection plan has accomplished many critical milestones to benefit residents. Nearly all of the project performance measures in the 2000 plan are on track to be completed or exceeded. To date these include removing more than 4,200 pounds of mercury from local streams and the San Francisco Bay; preventing other pollutants, toxins and hazardous materials from affecting our local waterways; completing the Calabazas Creek Flood Protection Project under budget and ahead of schedule; adding access to over 66 miles of pedestrian-friendly (and wherever possible, bicycle-safe) public trails and open spaces, and restoring more than 569 acres of tidal and riparian habitat—more than five times the original goal.

The Clean, Safe Creeks funding approved by voters in 2000 has been critical to meet our area's needs—but this funding is set to expire in 2016 if voters elect to not renew it. At the same time, federal funding has diminished significantly in the past decade since the passage of the Clean, Safe Creeks plan. The fact is, long-term revenues are not enough to provide the urgently needed projects and programs that will help us meet the future water resource needs of our region.

Without continued funding there will be major reductions and the elimination of some services, including grants for environmental enhancement and trails. To ensure uninterrupted services, on July 24, 2012, the District Board of Directors decided to place a measure on the November ballot to renew the expiring parcel tax and help ensure the future quality, safety and supply of our local water resources. There would be no increase in the tax rate structure under the Safe, Clean Water measure, and this local funding for local projects could not be taken by the state.

The 15-year Safe, Clean Water and Natural Flood Protection program proposed in this report is based on input from more than 16,000 residents and stakeholders, and fulfills five top community priorities:

- Ensure a safe, reliable water supply for the future
- Reduce toxins, hazards and contaminants, such as mercury and pharmaceuticals, in our waterways
- Protect our water supply and local dams from the impacts of earthquakes and natural disasters
- Restore fish, bird and wildlife habitat; and provide open space access
- Provide flood protection to homes, businesses, schools, streets and highways

To ensure transparency and accountability, the Safe, Clean Water funding would be overseen by an external independent monitoring committee and all expenditures would be published annually. In addition, at least two professional audits of the program would be carried out during the 15-year period. The funding renewal would also include exemptions for low-income seniors, just as with the current Clean, Safe Creeks plan.

At the Santa Clara Valley Water District we are dedicated to delivering high quality services. In recognition of this, the District was the first water agency in the state to become certified by the International Organization for Standardization. Currently, only one other water agency has achieved this prestigious recognition for quality management.

With voter passage of Safe, Clean Water 2012 the District would continue to provide the levels of service that the community has come to expect, as well as add new projects to protect water quality, update and repair infrastructure, restore wildlife habitat and protect against flooding. I invite you to get involved in water resource management—please visit our website at valleywater.org to find out more about what the District does, and how you can participate. Together, we can ensure that our county has a safe, reliable water supply for our present and future needs.

Sincerely,



Beau Goldie
Chief Executive Officer,
Santa Clara Valley Water District

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Acknowledgments

We are extremely grateful to the many community members, neighborhood groups, business owners, municipalities, advocacy groups, government officials, agencies, committees and other local organizations for giving their input, time and talent to help shape the Safe, Clean Water and Natural Flood Protection program. While space limitations prevent us from personally recognizing all those who gave input, we'd also like to thank the nearly 2,500 residents who took our online survey, many of whom left comments; the 11,000 community members who participated in our outreach activities; and all those who mailed letters, sent e-mails, or spoke at District meetings.

As the Safe, Clean Water program progresses we will continue to provide regular updates at open board meetings. We invite the ongoing participation of everyone in the community on this important program to secure water resources and ensure the future quality of life in Santa Clara County.

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Executive Summary

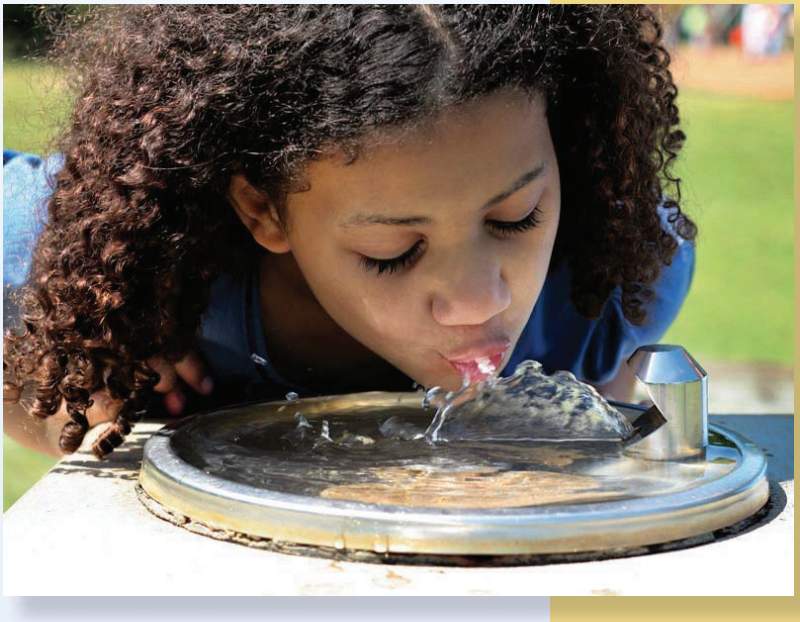
Overview: the Safe, Clean Water program

Safe, Clean Water and Natural Flood Protection (Safe, Clean Water) is a 15-year program to help secure the present and future water resources of Santa Clara County. The program builds upon the success of its predecessor: the 15-year Clean, Safe Creeks and Natural Flood Protection plan (Clean, Safe Creeks). The plan is funded by a special parcel tax approved by two-thirds of voters in 2000, due to expire in June 2016. Nearly all of the project performance measures in the 2000 plan have been completed or exceeded, or they are on track to be completed or exceeded (For more information please see Appendix C, Clean, Safe Creeks Performance, and section two, Background).

In preparation for the sunset of the Clean, Safe Creeks plan, the Santa Clara Valley Water District (District) conducted a massive outreach program to elicit input and determine community priorities for a new program. The result of this effort is the updated Safe, Clean Water program contained in this report, which addresses the current five top community priorities: securing a safe, reliable water supply; protecting our water system from earthquakes and natural disasters; preventing contaminants from entering the water supply; restoring habitat for fish, birds and wildlife and increasing open space; and enhancing flood protection.

On July 24, 2012, the District Board of Directors voted to place the measure on the November 6, 2012 ballot to renew the expiring parcel tax. The passage of the Safe, Clean Water ballot measure would renew funding at the same parcel tax rate structure approved under the previous Clean, Safe Creeks plan, and ensure a seamless continuation of critical water-related services to Santa Clara County. Voter approval would help bring in over $400 million in federal and state funds to build flood protection projects in high risk areas, as well as critical capital projects to maintain infrastructure. Since the parcel tax is for local projects, the State of California could not take funds to balance its own budget as it has in the past.

To ensure transparency and accountability, the District Board would appoint an Independent Monitoring Committee (IMC) of volunteers external to the District who would track progress and expenditures of the new program, and make recommendations to the Board of Directors (Board) as needed. The Board would also initiate



The future of Santa Clara County's businesses, neighborhoods, families, environment and wildlife all depends on water. Safe, Clean Water provides a 15-year program to preserve and protect our quality of life.



Safe, Clean Water and Natural Flood Protection

Overview of the program

- **Builds on success of the voter-approved 2000 Clean, Safe Creeks plan**
- **Based on 18 months of public outreach to evaluate current community priorities**
- **Continues vital existing services and adds new projects requested by community**
- **Passage would renew existing parcel tax at the same rate structure**
- **Local funding could not be taken by the state**
- **Independent monitoring of program with all expenditures published annually**
- **Helps bring in over $400 million in federal and state funds for critical capital projects**



Safe, Clean Water and Natural Flood Protection

Why Santa Clara County needs a renewed plan now

- **New local funding is needed to continue providing high-priority water resource services**
- **Federal funding has become increasingly unreliable and local funding is needed to make up for shortfalls**
- **Anderson Dam and Reservoir require mandatory earthquake retrofitting, and aging pipelines need upgrading to provide reliable water supply**
- **Completes flood protection that was funded only through planning and design under previous Clean, Safe Creeks plan**
- **Current regulatory requirements and new technologies need to be incorporated into a program**
- **Without new funding, vital services that improve drinking water quality, reduce contaminants, restore habitat, and provide flood protection will be reduced or eliminated**

at least two professional, independent audits of the program during its 15-year duration. As with the Clean, Safe Creeks plan, all IMC, staff and auditor reports would be available for public viewing, and any updates or changes to the program would be made in publicly noticed meetings.

Background: why Santa Clara County needs a renewed water services plan

When the District proposed the Clean, Safe Creeks special tax to voters in 2000, the plan included a 15-year sunset date. With the expiration of Clean, Safe Creeks approaching there are many reasons why an updated program is needed to secure water-related resources in Santa Clara County:

- **Community's top priority is reliable water supply**
  The world has changed in many ways since voters approved Clean, Safe Creeks 12 years ago. During the District's intensive 18-month public outreach process to develop a new program, all surveys and input showed that community priorities have changed along with the times. In particular, there is an increased public awareness of water quality and supply issues, as well as the importance of conservation and recycling. Virtually all surveys showed that the current top priority for residents is to secure a safe, reliable water supply. New projects in the Safe, Clean Water program will help fill this need.

- **Local funding, local projects**
  The economic downturn that occurred since the passage of Clean, Safe Creeks has caused federal funding to decrease and become much less reliable than when the measure was initiated in 2000. Two Clean, Safe Creeks flood protection projects—Upper Guadalupe River and Upper Llagas Creek—did not receive anticipated federal funds and require additional local funding to complete. While the District continues to pursue all possible sources of outside funding, communities everywhere must increasingly rely on local funding to construct local projects. Secure, local funding is more important than ever—even for projects that have financial partnering with the federal government or state.



- **Completing flood protection project**
  The Clean, Safe Creeks plan funded planning and design for San Francisquito Creek flood protection. This project is now ready for construction, which would be completed with funding from the new program.

Community priorities have changed since passage of the 2000 Clean, Safe Creeks plan—ensuring water reliability is a new top concern. The proposed Safe, Clean Water program includes earthquake retrofitting for Anderson Dam (shown here) which will improve safety and reliability, and restore the dam to its full operating capacity.

- **Aging infrastructure**
  Aging infrastructure needs repair and upgrades to meet local needs. This includes key facilities for water storage and conveyance.

- **New environmental requirements**
  Program would incorporate the many new environmental and regulatory requirements instituted since 2000, as well as new technologies that can help meet them.

- **Loss of services**
  Without funding to replace the expiring Clean, Safe Creeks parcel tax the District will be unable to address all of the new priorities that the community has requested, or maintain current levels of service for vital programs that reduce contaminants in our water supply, improve drinking water quality, conserve and restore wildlife habitat, create trails and open space, and provide critical flood protection.

Public outreach: how the program was formed

The District is here to serve the community; accordingly, a significant effort was made to engage the public in developing this program. The Safe, Clean Water program evolved through an interactive process involving community input, District analysis and refinement, and District Board actions. During initial outreach the District used an extensive array of tools and techniques to obtain significant community input on the formation of the new program. Outreach tools included: mailers sent to every household in the county (approximately 661,000), a dedicated Safe, Clean Water website with online survey, three voter surveys reaching 2,200 residents, phone and door-to-door follow-up field surveys to 14,000 households, and other venues of engagement. To ensure equity, some surveys and informational materials were available in English, Spanish, Vietnamese and Chinese.



Community leaders participated in two Blue Ribbon Forums where they provided critical review and recommendations on the draft Safe, Clean Water program.

After the development of the draft program, the District conducted two Blue Ribbon Forums where community leaders gave critical review to help refine the program. Offsite stakeholders were able to participate in the forums through WebEx conferencing. After 18 months of extensive public engagement and intensive draft refinement, the new Safe, Clean Water program was finalized to go before local voters as a November ballot measure. For more details on the program's outreach process please see section three, *Community Engagement*.



Safe, Clean Water and Natural Flood Protection

Over two dozen projects fulfill five community priorities:

Projects in Priority A: Ensure a safe, reliable water supply

A1 Main Avenue and Madrone Pipelines Restoration

A2 Safe, Clean Water Partnerships and Grants

A3 Pipeline Reliability Project

Projects in Priority B: Reduce toxins, hazards and contaminants in our waterways

B1 Impaired Water Bodies Improvement

B2 Interagency Urban Runoff Program

B3 Pollution Prevention Partnerships and Grants

B4 Good Neighbor Program: Illegal Encampment Cleanup

B5 Hazardous Materials Management and Response

B6 Good Neighbor Program: Remove Graffiti and Litter

B7 Support Volunteer Cleanup Efforts and Education *(Cont.)*

A program that fulfills community priorities

Results from The District's outreach surveys and massive community engagement process showed that the current top-rated community priorities are:

A. Ensure a safe, reliable water supply;
B. Reduce toxins, hazards and contaminants in our waterways;
C. Protect our water supply and dams from earthquakes and natural disasters;
D. Restore wildlife habitat and provide open space; and
E. Provide flood protection to homes, schools, businesses and highways.

The Safe, Clean Water and Natural Flood Protection program encompasses over two dozen projects grouped under these five community priorities. While projects are organized under these separate goals, they are actually all interrelated, multi-objective undertakings that work together to support all of the five priorities as a whole. For example, Priority D projects that restore wildlife habitat also reduce erosion and sedimentation and improve natural stream functions, which improve overall water quality and safety. The Anderson Dam Seismic Retrofit under Project C1 not only increases our water supply, it also ensures releases to support wildlife habitat downstream, and it protects downstream waterways from flooding. Flood protection projects under Priority E also reduce sedimentation and improve water quality, and some projects also improve habitat for endangered species, support fisheries, and create recreational opportunities.

The program includes new projects to fulfill new community priorities, as well as projects that continue vital water-related services from Clean, Safe Creeks. To address the community's new water supply and reliability concerns, the District added new elements to the program such as earthquake retrofitting of Anderson Dam, which is currently operating under safety restrictions. Retrofitting will restore the dam to its original storage capacity and help ensure an adequate water supply, which is especially important during drought years. Safe, Clean Water also includes upgrades to important drinking water conveyance systems to reduce down time during disaster recovery, as well as projects to increase water conservation and help improve water quality.



Flood protection capital projects in the program protect economically important urban areas and commuter transportation networks, as well as residential neighborhoods and agricultural land. Continued projects from Clean, Safe Creeks will maintain flood protection, clean up litter and graffiti, provide response for hazardous materials in creeks, reduce urban runoff, and restore fisheries and wildlife habitat.

The new program leverages local resources by providing many grant and partnership opportunities for community cleanups, pollution prevention, watershed stewardship, habitat enhancement and more.

The Safe, Clean Water program also increases money for grants and partnerships so that local community groups can complete more projects that benefit people, wildlife and the environment. These opportunities encourage proactive community action on water supply, runoff management, habitat restoration, trails and open space, pollution prevention, and more.

What follows is a summary list of the five Safe Clean Water priorities. Specific projects under each priority are listed in the sidebars. For detailed descriptions of projects under each priority please see section four, *Introducing the Safe, Clean Water program*. For an at-a-glance summary of all projects, please see Appendix fold-out Chart G-1. Appendix Chart G-2 covers anticipated scheduling for all projects, and Map G-3 shows project locations.

Safe, Clean Water five priorities

Priority A: Ensure a safe, reliable water supply

Projects under Priority A will upgrade aging water transmission systems to restore pipeline capacity and reduce the risk of water outages. The priority will also: provide grants to develop future conservation programs, help local schools fill state mandates for drinking water availability, and provide rebates on nitrate removal systems to improve water quality and safety for private well users.

Priority B: Reduce toxins, hazards and contaminants in our waterways

Priority B uses multiple strategies to reduce and remove contaminants in our local creeks, streams and bay. In addition to mercury treatment systems in our reservoirs, this priority also helps reduce the amount of pollutants entering waterways in the first place by working with municipalities and other agencies to reduce runoff pollution. The District would also provide grants to reduce impacts from emerging contaminants, and support public education and volunteer cleanup efforts. Additional projects include coordinated cleanup of illegal encampments near waterways, trash and graffiti removal, and quick emergency response to hazardous materials spills.

Priority C: Protect our water supply from earthquakes and natural disasters

Priority C includes partial funding to retrofit Anderson Dam and protect our water supply infrastructure from natural disasters such as earthquakes. It also includes emergency flood response enhancements to improve flood forecasting capabilities and help reduce damages from floods.

Priority D: Restore wildlife habitat and provide open space

The eight projects under Priority D restore and protect vital wildlife habitat, improve water quality, and provide opportunities for increased access to trails and open space. Funding for this priority would pay for removal of non-native, invasive plants; revegetation of native species; maintenance of previously revegetated areas; removal of fish barriers; improvement of steelhead habitat; and stabilization of eroded creekbanks.



Safe, Clean Water and Natural Flood Protection

Over two dozen projects fulfill five community priorities:

(From previous page)

Projects in Priority C: Protect our water supply from earthquakes and natural disasters

- **C1 Anderson Dam Seismic Retrofit**
- **C2 Emergency Response Upgrades**

Projects in Priority D: Restore wildlife habitat and provide open space

- **D1 Management of Revegetation Projects**
- **D2 Revitalize Stream, Upland and Wetland Habitat**
- **D3 Grants and Partnerships to Restore Wildlife Habitat and Provide Access to Trails**
- **D4 Fish Habitat and Passage Improvement**
- **D5 Ecological Data Collection and Analysis**
- **D6 Creek Restoration and Stabilization**
- **D7 Partnerships for the Conservation of Habitat Lands**
- **D8 South Bay Salt Ponds Restoration Partnership** *(Cont.)*



Over two dozen projects fulfill five community priorities:

(From previous page)

Projects in Priority E: Provide Flood Protection to Homes, Businesses, Schools and Highways

- **E1 Vegetation Control and Sediment Removal for Flood Protection**
- **E2 Emergency Response Planning**
- **E3 Flood Risk Reduction Studies**
- **E4 Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose**
- **E5 San Francisquito Creek Flood Protection, San Francisco Bay to Middlefield Road – Palo Alto**
- **E6 Upper Llagas Creek Flood Protection, Buena Vista Avenue to Wright Avenue – Morgan Hill, San Martin, Gilroy**
- **E7 San Francisco Bay Shoreline Study – Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara and Sunnyvale**
- **E8 Upper Guadalupe River Flood Protection, Highway 280 to Blossom Hill Road – San Jose**

To support these and future restoration projects the District would create a comprehensive, updated database on stream conditions countywide. The District and other agencies could then use the new information to make informed decisions on where and how to use restoration dollars to provide the greatest value for wildlife.

Priority E: Provide Flood Protection to Homes, Businesses, Schools and Highways

Flood protection measures under Priority E include capital construction projects, studies of flood prone areas, maintenance of existing flood protection channels, and improvements to emergency flood response.

Flood protection capital projects are prioritized to protect the largest number of people, homes, and businesses, as well as safeguard the highways, streets, public transportation and business centers that people depend on for their livelihoods. Flooding history, damage estimates, and economic impacts are all taken into consideration. All the construction projects under Priority E require federal funding for the preferred project, in addition to local funding. Whenever possible, the District also leverages funds from the state, local municipalities, and other stakeholders.

Priority E also provides ongoing maintenance for projects so that they continue to provide maximum flood protection. In addition, Emergency Response Planning minimizes damage from inevitable floods by allowing the District, local cities and the county to create action plans for flood prone sites.

Funding Safe, Clean Water: transitioning from the old plan

Once voters approve the tax measure, the Safe, Clean Water program would replace the sunsetting Clean, Safe Creeks plan in its entirety. Any tax payments collected for Clean, Safe Creeks would be used to continue corresponding projects under the new program which have comparable or expanded obligations. Funding collected for capital projects under Clean, Safe Creeks will be used to meet Clean,



Priority D provides protection and restoration of habitats to support endangered species such as the steelhead trout, salt marsh harvest mouse, California clapper rail and California red-legged frog. Shown here is a recent District wetland restoration in the upper Pajaro watershed.

Safe Creeks commitments under the new program by the same completion date. The only exceptions are the two flood protection projects which had to be modified and carried forward into the new program due to federal funding shortfalls. (For details, please see section four, *Introducing the Safe, Clean Water Program*.)

As a continuation of the existing plan, the Safe, Clean Water program would have parcel taxes assessed using the same rate structure as that under Clean, Safe Creeks, and would include exemptions for low-income seniors. As with Clean, Safe Creeks, the Safe, Clean Water program has a built-in sunset date with the tax ending in 15 years on June 30, 2028. Details on the parcel tax rate structure are provided in section five, *Financing the Program,* and in Appendix D, *Special Tax Rate Structure.*

The total $720 million cost (in fiscal year 2012 dollars) of the entire Safe, Clean Water program would be funded primarily by the new voter-approved parcel tax ($548 million), along with Clean, Safe Creek reserves to complete Clean, Safe Creeks projects ($113 million), state reimbursements for federally approved flood protection projects ($47 million), and interest earned on funds waiting to be used ($12 million). ***Table 1-1, Total Estimated Safe, Clean Water Funding Sources and Uses,*** lists all estimated funding sources and all costs by priority, and shows that total funding sources is equal to the total cost of the program.

Safe, Clean Water and Natural Flood Protection is balanced over the 15-year duration of the program. The total funding sources of $720 million are equal to total funding uses.

Table 1-1 Total Estimated Safe, Clean Water Funding Sources and Uses

	15-Year Estimated Total in Millions (2012 Dollars)	Percent of Total
Funding sources		
Special parcel tax revenue	$548	76%
Beginning Clean, Safe Creeks reserves	$113	16%
State reimbursements*	$47	6%
Interest and miscellaneous	$12	2%
Total funding sources	**$720**	**100%**
Funding uses		
Safe, Clean Water program priorities		
A – Ensure a safe reliable water supply	$15	
B – Reduce toxins, hazards and contaminants in our waterways	$54	
C – Protect our water supply from earthquakes and natural disasters	$48	
D – Restore wildlife habitat and provide open space	$108	
E – Provide flood protection to homes, businesses, schools, and highways*	$201	
Subtotal program priorities A thru E	$426	59%
Planning and delivery	$21	3%
Debt financing**	$21	3%
Undesignated contingency	$38	5%
Completing Clean, Safe Creeks 2000 Plan	$214	30%
Total funding uses	**$720**	**100%**

*State reimbursements do not include $20 million in anticipated subventions that are carried as a reduction to the Priority E Upper Llagas Creek project cost.
**Cost of financing is the net of debt service of $133 million less debt proceeds of $112 million.

Financing the program

The program would use a combination of debt financing and pay-as-you-go funding to pay for capital projects. Approximately 23 percent of capital projects cost would be funded through Certificates of Participation (COPs). COPs will help propel new Safe, Clean Water capital projects forward instead of waiting for tax revenue to accumulate. Debt proceeds of $112 million are planned for 2015. Debt service of $133 million includes $21 million interest plus the $112 million principal borrowed.



The program would help bring in over $400 million in federal and state funds to protect economic centers, transportation networks and neighborhoods from flooding, as well as repair and upgrade infrastructure. Photo shows 2009 flooding in Morgan Hill from Llagas Creek.

The remaining 77 percent of capital costs for the Safe Clean Water program will be covered by pay-as-you-go financing. While this means that some construction will not begin until later in the 15-year program, planning and design of these projects will still move forward. For further details on Safe, Clean Water funding and the transition from the Clean, Safe Creeks plan, please see section five, *Financing the Program.*

Implementing the program: an ongoing process of refinement

With the passage of the Safe, Clean Water program, the District would begin drafting the first of three implementation plans that would each cover five years of the 15-year measure. This strategy was suggested by independent auditors of the Clean, Safe, Creeks plan, to allow for adjustments to keep the program current with ongoing economic, policy and regulatory changes.

As each five-year plan proceeds, the Independent Monitoring Committee, District Board, and staff will continually share information so that all projects remain on-track, with adjustments as needed to ensure that key performance indicators are achieved on time and within budget. All decisions on the program would be carried out in publicly noticed District Board meetings which are also streamed live on the District website. For more information please see section six, *Implementing the Program.*

Background

Safe, Clean Water program builds on success of previous Clean, Safe Creeks measure

In 2000, Santa Clara County voters approved the Clean, Safe Creeks and Natural Flood Protection (Clean, Safe Creeks) special parcel tax, which funds projects that address community needs for enhanced stream stewardship and flood protection. The special tax supports projects that restore habitat, maintain healthy creek and bay ecosystems, improve water quality, reduce flood risks, and provide open space and recreational opportunities. To ensure accountability to the voters, the ballot measure also created an Independent Monitoring Committee to oversee the plan's progress and ensure that outcomes are met in a cost-effective manner.

Nearly all of the many high priority projects named in the 2000 measure have been completed or exceeded, or they are on track to be completed or exceeded. This includes all six flood protection projects that were entirely locally funded, and one of the three flood protection projects that are heavily dependent on federal funding. The remaining two federally funded projects did not receive anticipated funds to achieve their full project scopes, so they are on track to meet or exceed performance measures delineated for the less comprehensive "local funding only" scenario. These two projects are included in the Safe, Clean Water and Natural Flood Protection program (Safe, Clean Water) to receive additional local funding that will keep the full projects moving forward and ensure eligibility for federal money when it becomes available.

The Clean, Safe Creeks special tax is scheduled to sunset in June 2016, but without it the District cannot continue to provide the services that the community demands. In anticipation of the end of this special tax funding, the District began an intensive outreach effort in 2011 to reassess community priorities and formulate an updated program. An 18-month period of public input and program refinement resulted in this proposed Safe, Clean Water program, which includes new projects based on stakeholder input, as well as the continuation of important



Without new funding, services that reduce contaminants in our creeks and bay will be cut back or eliminated. Here, a District chemist analyzes the quality of drinking water samples.



Safe, Clean Water and Natural Flood Protection

Building on success: Clean, Safe Creeks milestones

- **Nearly all Clean, Safe Creeks projects are completed or on track for completion**
- **Six locally funded flood protection projects are on schedule for completion within or below budget**
- **Removed 58,988 cubic yards of sediment from stream channels to maintain floodwater carrying capacity**
- **Removed 4,200 pounds of mercury from waterways and reduced other pollution sources** *(Cont.)*

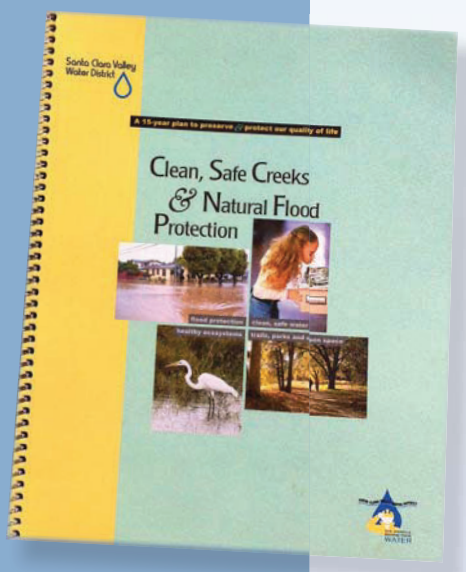


Safe, Clean Water and Natural Flood Protection

Building on success: Clean, Safe Creeks performance

(From previous page)

- **Met 100 percent of urgent response requests to clean up hazardous materials, litter and graffiti**
- **Conducted annual major cleanup events at 685 creek and stream locations**
- **Managed 15,240 acres of vegetation, exceeding target-to-date of 13,199 acres; on track for 22,000-acre goal**
- **Restored more than 569 acres of tidal and riparian habitat—more than five times the original 100-acre goal**
- **Partnerships provided 66.7 miles of trails/open space to date—on schedule to reach 70-mile goal**



Nearly all projects in the 2000 Clean, Safe Creeks plan have reached performance measures and are completed or on track for completion.

services that are currently being provided by Clean, Safe Creeks. To fund the new program, a special tax measure will appear on the November 2012 ballot. If passed, the Safe, Clean Water special tax will renew the expiring Clean, Safe Creeks tax with the same rate structure. The renewed local funding would become effective in July 2013, allowing for a seamless transition that builds on the successes of Clean, Safe Creeks.

Why it's time to update Santa Clara County's water services plan

- After the sunset of the Clean, Safe Creeks parcel tax, there would be a significant drop in local funding. Without renewed funding some critical water programs will be greatly reduced or eliminated altogether. The most significant impacts will be a **reduced ability to remediate impaired water bodies, improve water quality, respond to hazardous materials emergencies and provide flood protection and stream stewardship projects. Also, maintenance of existing infrastructure would be curtailed.** Replacing the Clean, Safe Creeks plan would allow the District to continue the services that ensure safe, reliable drinking water, provide protection from floodwaters, and conserve and enhance the creek and bay environment.

- Not surprisingly, the **needs and wants of stakeholders in Santa Clara County have changed** since the voters approved the Clean, Safe Creeks plan more than a decade ago. Input from phone surveys, door-to-door surveys, online questionnaires, stakeholder meetings and many more venues shows that the community's top priorities now include securing a reliable water supply to meet the county's ongoing and future needs, and protecting water supply and dams from earthquakes and natural disasters. Other top priorities continue to be reducing toxins, hazards and contaminants in our creeks and bays; restoring wildlife habitat and providing trails and open space access; and protecting homes, schools, businesses and transportation networks from flooding. The Safe, Clean Water program has new projects to fulfill new priorities, as well as continued services from Clean, Safe Creeks to meet ongoing priorities.

- Some key facilities in the existing water storage and conveyance systems are decades old, too small or outdated to meet local needs, or need repair and upgrades. To meet the community's new water reliability priority, Safe, Clean Water includes **upgrades of water supply pipelines, retrofitting of Anderson Dam to protect our water system from earthquakes and natural disasters, and programs to increase water conservation and water quality**. Retrofitting the dam would meet safety standards and remove operating restrictions so it can once again function at maximum efficiency and provide more water for our community. The Safe, Clean Water special tax would fund a portion of cost to make all these needed repairs.



Why Santa Clara County needs a renewed plan now

- **New local funding is needed to continue providing high-priority water resource services**
- **Without new funding, vital services that improve drinking water quality, reduce contaminants, restore habitat, and provide flood protection will be reduced or eliminated**
- **Anderson Dam and Reservoir require mandatory earthquake retrofitting** *(Cont.)*

- During the current economic downturn, funding from the federal government has diminished and become unreliable. While the District will continue to pursue outside funding, additional local funding must be secured to make up for reduced federal contributions. The District needs to increasingly rely on local funding for local projects. The Safe, Clean Water special tax improves local control by reducing dependence on state and federal sources, and by allowing the District to issue bonds to ensure that urgently needed projects can be completed on time, without waiting for unreliable outside funding. These funds cannot be taken by the state, which has taken local tax revenues in the past to balance its own budget. In fact, this local funding would better enable the District to leverage dollars and be eligible for grants and other external funding. In this new economic climate, solving local issues requires a local approach, with local funding.

- The world is a different place since the passage of the Clean, Safe Creeks special tax in 2000. In addition to our state's budget problems, there are new government policies and new regulatory requirements to fulfill. At the same time, we have gained new knowledge and technologies to address environmental challenges. The Safe, Clean Water program addresses new regulatory and policy requirements such as water quality requirements, and supports new technologies to meet those requirements, such as mercury treatment systems.

- Although the sunset of Clean, Safe Creeks is a few years away, the District needs to plan ahead to implement long-term pollution control and safety programs, and provide an uninterrupted flow of services. Having a replacement special tax on the November 2012 ballot provides the lead time needed to seamlessly replace the Clean, Safe Creeks plan with the updated Safe, Clean Water program.

Clean, Safe Creeks 2000 performance: accountability and transparency

The Clean, Safe Creeks plan receives oversight by an external Independent Monitoring Committee (IMC) comprised of community members, just as the proposed Safe, Clean Water program would be if passed. The Clean, Safe Creeks IMC holds public meetings and produces an annual report to provide spending oversight, track progress toward all outcomes, detail the plan's effectiveness, and provide recommendations for further progress.

The most recent IMC report released in January 2012 shows that nearly all the projects in the 2000 Clean, Safe Creeks plan have reached expected performance measures and are completed or on track for completion. This includes the six locally funded flood protection projects and one of the three federally funded projects. The remaining two projects that relied upon federal funding have been

"It is evident that the District is comprised of a high-performing team of professionals who can be characterized as: mission-driven, talented and hardworking, dedicated to achieving the [Clean, Safe Creeks] plan, and committed to transparency and good stewardship of public funding."

—from June 2012 impartial audit of Clean, Safe Creeks plan by Moss Adams LLP



Safe, Clean Water and Natural Flood Protection

Why Santa Clara County needs a renewed plan now

(From previous page)

- **Aging pipelines and infrastructure need upgrading to provide reliable water supply**
- **Federal funding has become increasingly unreliable and local funding is needed to make up for shortfalls**
- **Recent regulatory requirements and new technologies need to be incorporated into a new program**

delayed due to shortfalls: the Upper Guadalupe River and Upper Llagas Creek flood protection projects. However, both of those projects are on schedule to meet or exceed performance goals set for a "local funding only" scenario as delineated in the Clean, Safe Creeks plan. Specific information on these and other projects is provided in section four of this report, *Introducing the Safe, Clean Water Program.* A summary of the status of all Clean, Safe Creeks and Natural Flood Protection projects and outcomes is provided in Appendix C of this report. For more information on Clean, Safe Creeks progress and to view the latest IMC reports please visit the IMC web page at valleywater.org/Programs/CleanSafeCreeksPlan.aspx.

In addition to the IMC report, Clean Safe Creeks was audited by Moss Adams LLP in 2012, in accordance with Government Accountability Office Generally Accepted Governmental Auditing Standards. The audit found that the special tax was levied and collected in accordance with the provisions of Measure B (2000), that the tax proceeds were used correctly for the Clean, Safe Creeks plan, and that the District is on track to meet the majority of its key performance indicators. The auditors also made several recommendations which will be incorporated into the implementation of the Safe, Clean Water program. These include periodically updating the program as regulatory, economic and policy changes occur, and clearly defining the end-point, or completion definition, for each project in the program. The full audit can be found at valleywater.org/About/TransparencyAccountability.aspx.



Grants and partnerships under Clean, Safe Creeks helped restore more than 569 acres of creekside and tidal habitat—five times the original goal. Here, consecutive photos show riparian restoration in Cupertino on Stevens Creek, an important spawning and rearing habitat for steelhead trout.

Community engagement



Safe, Clean Water and Natural Flood Protection

Community engagement process

- **Three voter opinion surveys with 2,200 residents from all areas of Santa Clara County**
- **Phone and door-to-door field surveys of 14,000 residents in all areas of county to confirm voter survey results**
- **Four focus groups to identify community-preferred program elements**
- **Mailers sent to every household in Santa Clara County—approximately 661,000—with invitation to online survey**

(Cont.)

Beginning in March 2011, the District launched a wide-reaching engagement process to solicit ideas for a new program to replace Clean, Safe Creeks, which sunsets in 2016. It was critical that the program reflect the community's priorities and values, and balance the diverse and sometimes conflicting interests of stakeholders. To accomplish this goal, the District used a wide array of tools and techniques to engage approximately 16,000 residents, businesses and other stakeholders during an intensive 18-month period. To ensure fair representation, the District conducted outreach in all areas of the county, making sure to include historically underserved populations and providing surveys and informational materials in multiple languages.

How community engagement shaped the program

The timeline shown in ***Chart 3-2*** on page 3.3 shows the many venues that the District used to gather input on the program, beginning with general voter surveys to identify top priorities, and moving on to door-to-door surveys, online surveys and focus groups.

From the initial surveys forward, all input collected showed that priorities had changed since the original Clean, Safe Creeks plan was developed in 2000. The numerous surveys consistently found the same top-tier priorities from all geographic areas of the community: securing a safe, reliable water supply; protecting our water system from earthquakes and natural disasters; and preventing contaminants from entering the water supply. The community also placed a high value on restoring habitat for fish, birds and wildlife, and increasing flood protection.

Creating a fair and balanced program

Once the top community priorities were identified, the District evaluated needs in the District's long-term master plan and capital improvement program, and selected project elements to support each community priority. The District used a criteria-based ranking system to evaluate the benefits of proposed projects and programs and gave priority to those that: were critical to providing uninterrupted service; were highly desired by the community; leveraged outside funding, partnerships or volunteer resources; maintained existing levels of service; had a good cost to benefit ratio; supported mandatory regulatory requirements or legal obligations; benefited the most residents; and provided countywide equity.

To address the community's water supply priorities, the District added new elements to the proposed program. These include the upgrade and earthquake retrofitting of transmission pipelines and the Anderson Dam to protect our water system from natural disasters, and additional projects to increase water conservation. The new program also continues to support surface water quality improvement, increased flood protection, and habitat restoration.



The District engaged over 16,000 stakeholders during the outreach process through door-to-door, phone, and online surveys, as well as other venues.



Community engagement process

(From previous page)

- **Two Blue Ribbon Forums with WebEx conferencing during which community leaders helped refine draft program**
- **Personal meetings with county officials and mayors of all cities**
- **Nearly 60 presentations to community organizations**
- **Regular updates to all District Board advisory committees**
- **Safe, Clean Water program updates during nine publicly noticed District Board meetings**
- **Numerous print and online publications about the new Safe, Clean Water program (see sidebar, page 3.5), including multilingual flyers**

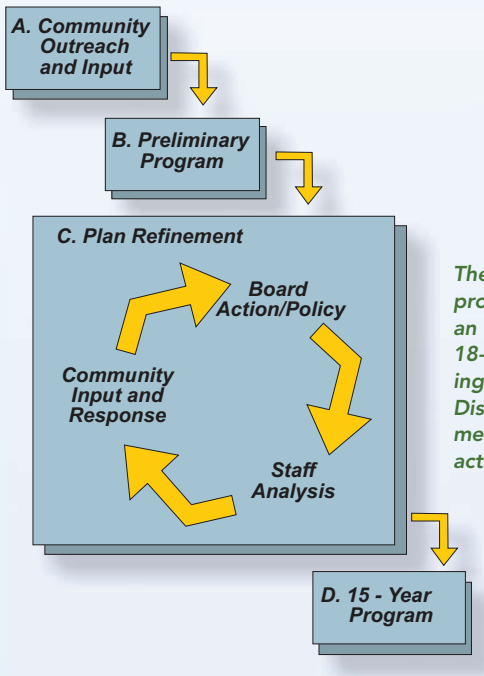
Once the Safe, Clean Water program was drafted, District staff introduced it to the community so that a wide variety of stakeholders could provide commentary. During the 10-month feedback period, the District conducted nearly 60 community presentations as well as two Blue Ribbon Forums in which community leaders from across the county gave critical review and recommendations. As shown in ***Chart 3.1*** below, the new program evolved through an interactive process involving community input, District analysis and refinement, and Board action. This process of input and refinement resulted in the 15-year Safe, Clean Water and Natural Flood Protection program, a measure which fulfills community needs and meets District obligations while at the same time providing economical water-related services in our region.

Outreach tools and techniques

Voter opinion scientific phone surveys

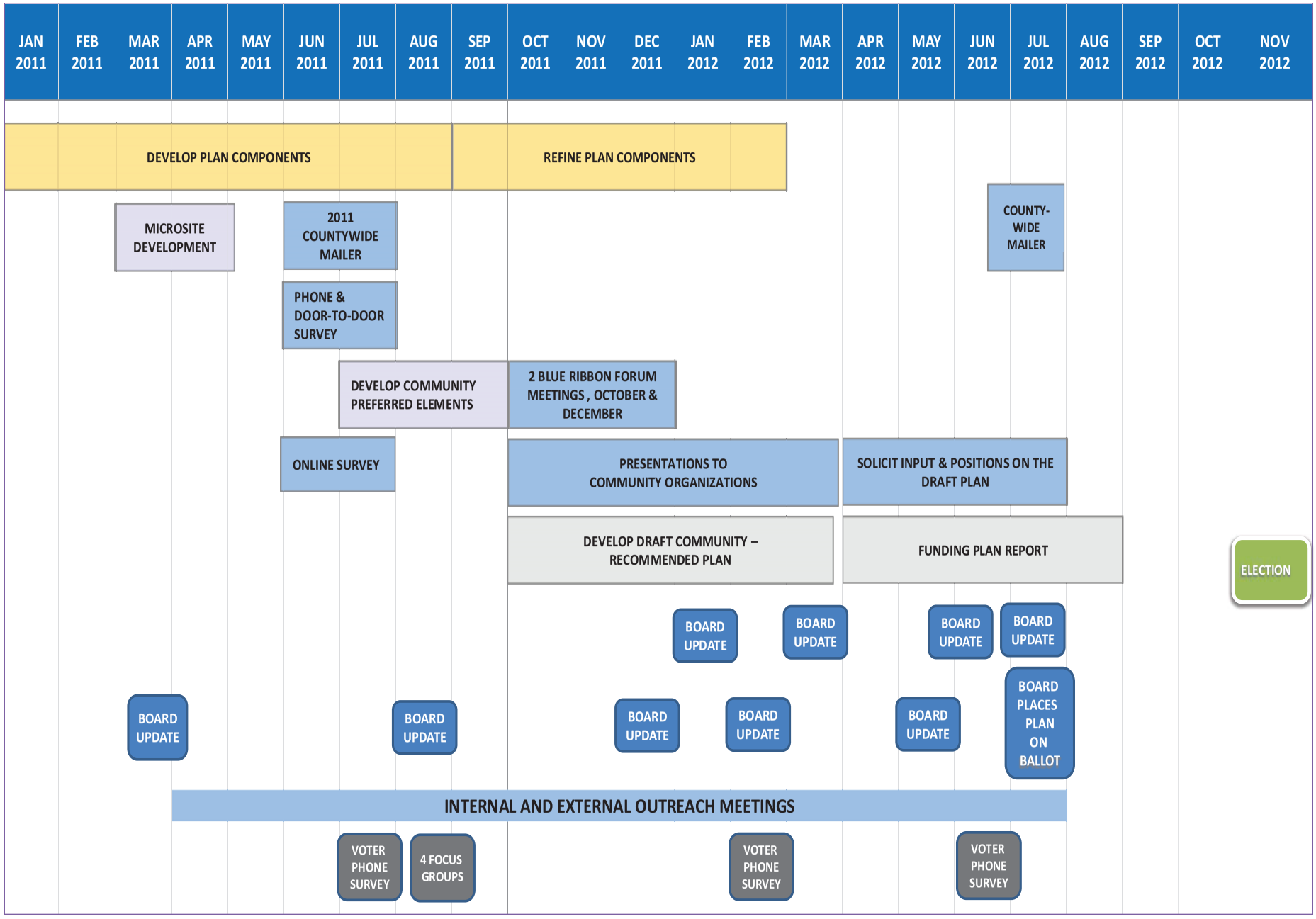
The District conducted three scientific voter opinion surveys between June 2011 and June 2012 consisting of 20-minute interviews with a total of 2,200 residents from all geographic areas of the county. To help ensure a representative sampling, some surveys were conducted in English, Spanish, Vietnamese and Chinese, and included both landline and cellular phones. Input was analyzed against previous surveys dating back to 1997. All the surveys showed by a large margin that the community's current top priority was a safe, reliable water supply. The second survey in February 2012 revealed that the majority of voters preferred to continue the tax rate at the current level rather than at a reduced rate that would cut services. A final phone survey was conducted in June 2012 to gather information for possible placement of the program on the November ballot.

Chart 3-1 Community Engagement Process



The Safe, Clean Water program evolved through an interactive and dynamic 18-month process involving community input, District analysis and refinement, and District Board actions.

Chart 3-2 Safe, Clean Water Outreach Schedule



6/25/12



Safe, Clean Water and Natural Flood Protection

Community engagement: who we contacted

- Mayors of all 15 Cities in Santa Clara County
- Santa Clara County Board of Supervisors
- Government agencies/representatives (114)
- Chambers of commerce (19)
- Environmental groups (24)
- Business associations (39)
- Ethnic organizations (18)
- Political organizations (18)
- School districts (38}
- Neighborhood associations (466)
- Other community organizations (41)

Online survey and mailers

The District also invited all county residents to participate in an online survey through a user-friendly website at safecleanwater.org. In June and July 2011, every household in Santa Clara County received a mailer (approximately 661,000 total) informing residents about the Safe, Clean Water program and encouraging them to visit the site. Nearly 2,500 people took the online survey and offered comments. The survey was also promoted on the District's Facebook and Twitter social media sites.

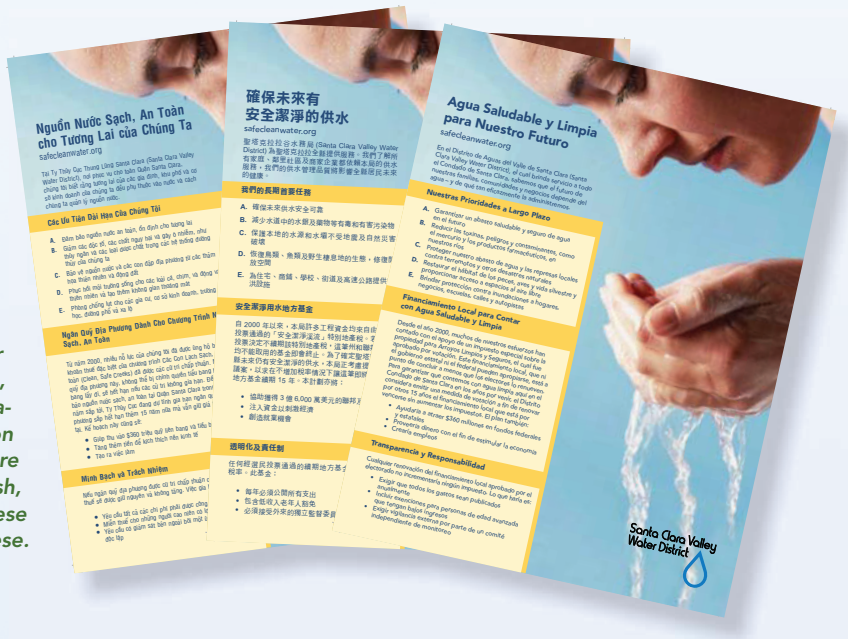
Phone and door-to-door field surveys

To independently validate findings from the voter opinion phone surveys, the District performed grassroots field surveys that targeted a larger and more diverse population sample. These phone and door-to-door surveys also served as follow-up calls to the online survey mailer to help ensure an effective response. During June and July 2011, interviewers surveyed approximately 11,000 county voters in-person and over the phone in every city of Santa Clara County, and in rural areas. Results from this larger sampling showed the same top water priorities as the voter opinion phone survey. To further engage the public, door-to-door interviewers left behind a flyer available in multiple languages.

Focus groups

Following the phone and door-to-door surveys, the District conducted four focus groups to obtain a deeper understanding of which services the community preferred within each top priority. These two-hour workshops were carried out by trained moderators with a total of 60 participants representing the voting public in all areas of the county, both urban and rural. Input from focus groups helped the District refine the specific elements to be included under the five priorities of the Safe, Clean Water program.

To ensure fair representation, surveys and informational materials on the new program were available in English, Spanish, Vietnamese and Chinese.





Blue Ribbon Forums

Once District staff developed a community-preferred draft program, it was presented to community leaders during two countywide Blue Ribbon Forums held in October and December of 2011. The forums were facilitated by the American Leadership Forum of Silicon Valley and attracted more than 60 participants each, representing a broad spectrum of interests including agriculture, recreation, open space, conservation and the environment, business interests, community organizations, ethnic organizations, municipalities, academia, and elected officials at the local, regional, state, and federal levels.

At the October forum, attendees participated in breakout discussion groups and provided comments and suggestions on the draft. During the December forum, staff returned with a revised draft that incorporated stakeholder input. Program additions included a $500,000 grant to engage stakeholders in the development of a stream restoration priority list, and a rebate program for private well owners who purchase nitrate removal systems, as well as other additions and refinements. The revised program also included updated project descriptions, an outline of costs and benefits, and geographic locations of projects.

To facilitate broader participation during each forum, the District provided live WebEx conferencing which allowed off-site participants to engage in both the breakout sessions and larger group dialogue online. WebEx participants were also able to view presentations and ask questions of presenters and technical staff. Both forums were recorded and are available for viewing at safecleanwater.org.

Presentations to community organizations

Throughout development of the draft program, the District provided presentations to nearly 60 community organizations, allowing another 1,250 people to provide input on the proposed program. District staff traveled to all areas of the county

Safe, Clean Water and Natural Flood Protection

Community engagement: print and electronic outreach

- **Dedicated program website at safecleanwater.org**
- **Online survey with over 2,500 participants**
- **Safe, Clean Water information mailer sent to every county household**
- **Facebook and Twitter social media sites**
- **Safe, Clean Water program brochure**

(Cont.)



Community leaders participated in two Blue Ribbon Forums where they provided critical review and recommendations on the draft Safe, Clean Water program.



Community engagement: print and electronic outreach

(From previous page)

- **Annual District mailer sent to every county household**
- **Seventeen flyers tailored for specific cities, the county, businesses, neighborhoods and environmental groups**
- **Safe, Clean Water: 51 Questions and Answers from Blue Ribbon Forum**
- **Safe, Clean Water environmental projects brochure**
- **Tabling at community events**
- **E-mail updates to stakeholders and over 2,500 online survey participants**
- **Safe, Clean Water updates in District e-newsletter**
- **Surveys and informational flyers provided in English, Spanish, Vietnamese and Chinese**
- **Outreach to media**

to meet with civic organizations, environmental groups, neighborhood associations, senior groups, business associations, and more. Please see the "Community Engagement: Who We Contacted" sidebar on page 3.4 for a complete listing.

Outreach to community leaders and municipalities

The District contacted 174 government agencies and representatives, including elected members of our federal, state, regional, and local delegations and their staff. District staff also met personally with officials from all 15 area cities and the county, and made presentations at local city council meetings. Staff also contacted all area school districts, including each district's board of trustees. In addition, the District published 17 specialized handouts outlining the benefits, projects and partnership opportunities that the new program offered to individual cities and the county, as well as neighborhoods, businesses and environmental groups.

Presentations to board advisory committees

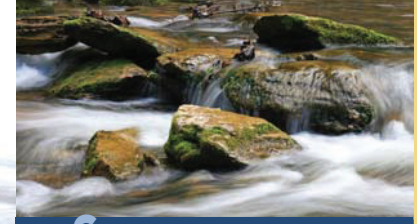
Staff provided regular project updates to community volunteers on the District's eight advisory committees which provide advice and recommendations to the District Board on a wide range of policy and operational issues. Staff made presentations to the District's four Flood Protection and Watershed Advisory Committees; the Environmental, Agricultural Water and Landscape Advisory Committees; and the Santa Clara Valley Water Commission. Staff also engaged the Clean, Safe Creeks Independent Monitoring Committee which monitors the finances and accomplishments of the existing Clean, Safe Creeks and Natural Flood Protection program.

Public board meetings

Staff provided regular updates and received direction on the Safe, Clean Water program during nine public board meetings that occurred between March 2011 and July 2012. Meeting agendas are posted on the District website in advance so interested stakeholders can plan to provide input in-person, or watch the meeting online via real-time webcasting. All meetings are archived and can be viewed at valleywater.org.

Print and electronic publications

Throughout the development of Safe, Clean Water, the District used many educational tools to disseminate information on the draft program, encourage input to the planning process, and inform the public about the Santa Clara Valley's water resources functions. To reach as many residents as possible, neighborhood handouts were produced in English, Spanish, Vietnamese and Chinese. See sidebar for partial listing of Safe, Clean Water print and electronic outreach.



Introducing the Safe, Clean Water program

Safe, Clean Water and Natural Flood Protection (Safe, Clean Water) is a 15-year program to help secure the present and future water resources of Santa Clara County. The program builds upon the success of its predecessor: the Clean, Safe Creeks and Natural Flood Protection plan (Clean, Safe Creeks), funded by a special parcel tax which was approved by two-thirds of voters in 2000.

Safe, Clean Water highlights

Results from 18 months of outreach surveys and community engagement showed that current top community priorities were: securing a safe, reliable water supply; protecting our water system from earthquakes and natural disasters; preventing contaminants from entering the water supply; restoring habitat for fish, birds and wildlife and increasing open space; and enhancing flood protection. The new Safe, Clean Water program encompasses 28 projects grouped under these five top-rated community priorities.

Prevents loss of important services and adds new top-priority projects

The program ensures that important services from Clean, Safe Creeks continue without interruption, and it adds new projects to address top-tier community priorities. To address the community's new water supply and reliability concerns the District added new elements to the program such as earthquake retrofitting of Anderson Dam; this vital facility is currently operating under safety restrictions. Retrofitting will restore the dam to its original storage capacity and help ensure an adequate water supply, which is especially important during drought years. Safe, Clean Water also includes upgrades to important drinking water conveyance systems to reduce downtime during disaster recovery, as well as projects to increase water conservation and help improve water quality.



Renewed funding from the Safe, Clean Water ballot measure would ensure that critical water services continue to support water quality, pollution reduction, flood protection, emergency response, stream stewardship and habitat restoration.

Safe, Clean Water and Natural Flood Protection

The five priorities of the Safe, Clean Water program:

A Ensure a safe, reliable water supply

B Reduce toxins, hazards and contaminants in our waterways

C Protect our water supply and dams from earthquakes and natural disasters

D Restore wildlife habitat and provide open space

E Provide flood protection to homes, schools, businesses and highways



Without renewed funding, the District cannot maintain current levels of service or provide new, community-requested projects which would benefit all 1.8 million residents of Santa Clara County. Shown here is a sky-high view of the former Cargill salt production ponds, looking south over San Jose, Santa Clara and Milpitas. The Safe, Clean Water program would continue to help fund environmental restoration and flood protection efforts in this area.

Flood protection capital projects in the program protect economically important urban areas and commuter transportation networks, as well as residential neighborhoods and agricultural land.

Continued projects from Clean, Safe Creeks will maintain flood protection, clean up litter and graffiti, provide hazardous materials response, reduce urban runoff, and restore fisheries and wildlife habitat. The Safe, Clean Water program also increases seed money for grants and partnerships so that local community groups can complete more projects that benefit people, wildlife and the environment. These opportunities encourage proactive community action on water supply, runoff management, habitat restoration, trails and open space, pollution prevention, and more.

The following pages summarize all projects under the five priorities of the Safe, Clean Water program.

Table 4-1 Safe, Clean Water Estimated Costs By Priority

Priority	15-Year Estimated Cost in Millions (2012 Dollars)	Percent of Total
A – Ensure a safe reliable water supply	$15	4%
B – Reduce toxins, hazards and contaminants in our waterways	$54	13%
C – Protect our water supply from earthquakes and natural disasters	$48	11%
D – Restore wildlife habitat and provide open space	$108	25%
E – Provide flood protection to homes, businesses, schools, and highways*	$201	47%
TOTAL	$426	100%

*Priority E does not include $20 million of anticipated state subventions because this expected reimbursement has been deducted from the estimated Upper Llagas Creek project cost

The Safe, Clean Water program delivers services and capital projects that fulfill five top-rated community priorities. For financial breakdowns by project please see the following pages in this section, or Appendix fold-out Chart G-1.



Project A1: Main Avenue and Madrone Pipelines Restoration

- **Upgrade aging water transmission systems**
- **Restore carrying capacity of pipelines**
- **Increase groundwater recharge in South County**
- **Save energy and reduce operating costs**
- **Reduce CO_2 emissions**

Priority A: Ensure a safe, reliable water supply

Priority A will upgrade aging water transmission systems to increase pipeline capacity and reduce the risk of water outages following a catastrophic event. The Priority will also: provide grants to develop future conservation programs, help local schools fulfill state mandates for drinking water availability, and provide rebates on nitrate removal systems to improve water quality and safety for private well users.

PROJECT A1 Main Avenue and Madrone Pipelines Restoration

This project will restore the Main Avenue and Madrone pipelines to full operating capacity of 37 cubic feet per second from Anderson Reservoir. The upgrade includes replacement of a one-mile section of pipe on the Main Avenue line which has been out of service since 1994, and restoration of approximately 1.25 miles of Madrone pipeline which has restricted capacity due to root intrusion and deterioration.

Benefits

- Increases groundwater recharge by about 2,000 acre-feet per year in South County's Llagas Groundwater Sub-basin, a sufficient water supply for 4,000 families of five
- Improves operational flexibility
- Maximizes the delivery of imported water to treatment plants supplying drinking water to North County
- Saves energy, reduces operating costs, and cuts CO_2 emissions by reducing dependence on Coyote Pumping Plant

Key performance indicators

1. Restore transmission pipelines to full operating capacity of 37 cubic feet per second from Anderson Reservoir.
2. Restore ability to deliver 20 cubic feet per second to Madrone Channel.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $5.4 million
Estimated total project cost: $5.4 million



Project A1 will repair a connection between South County and Anderson Reservoir, the largest surface water storage facility in the county. Shown here is a section of similar size pipeline.



Project A2: Safe, Clean Water Partnerships and Grants

- **Provide grants for new water conservation projects**
- **Help schools provide safe, clean drinking water to students**
- **Provide rebates for private well water users to remove nitrates from drinking water**

Project A3: Pipeline Reliability Project

- **Improve reliability of drinking water distribution pipelines**
- **Install line valves to reduce water outages during repairs and maintenance**

PROJECT A2 Safe, Clean Water Partnerships and Grants

Grants and partnerships covered under this project include:

- Grants for agencies and organizations to study and pilot-test new water conservation programs. In Fiscal Year 2010, county water conservation stood at 50,600 acre-feet, but this number needs to nearly double by 2030 to meet future demand.
- Grants to help schools in the county provide drinking water dispensers and other potable water devices for students. California Senate Bill 1413 requires that schools provide access to free, fresh drinking water during mealtimes in food service areas.
- Rebates to private well water users for the installation of point-of-use treatment systems to remove excess nitrate from their drinking water.

Benefits

- Helps the District exceed the conservation goal of 98,500 acre-feet per year by 2030
- Reduces water demands and the need to invest in new or expanded water supply sources and associated infrastructure
- Increases water supply reliability
- Helps schools provide safe, clean drinking water to students and comply with state mandate
- Assists private well water users in maintaining the quality and safety of their drinking water



Weather-based irrigation control systems are one of many tools that allow our county to achieve local water conservation goals. Grants in the proposed Safe, Clean Water program will promote the development of new projects and devices to further increase water conservation and ensure our future water supply.

Key performance indicators

1. Award up to $1 million to test new conservation activities.
2. Increase number of schools in Santa Clara County in compliance with SB 1413 and the Healthy Hunger-Free Kids Act, regarding access to drinking water by awarding 100 percent of eligible grant requests for the installation of hydration stations; a maximum of 250 grants up to $254,000.
3. Reduce number of private well water users exposed to nitrate above drinking water standards by awarding 100 percent of eligible rebate requests for the installation of nitrate removal systems; a maximum of 1,000 rebates up to $702,000.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $2.2 million
Estimated total project cost: $2.2 million



New line valves will allow the District to isolate sections of pipeline during repair and maintenance, which will reduce the risk of outages after a major earthquake.

PROJECT A3 **Pipeline Reliability Project**

This project constructs four line valves at various locations along the East, West and Snell treated water pipelines in Saratoga, Cupertino and San Jose. This will allow the District to isolate sections of pipelines for scheduled maintenance and repairs following a catastrophic event, such as a major earthquake.

Benefits

- Suppports shorter service interruption in the case of a pipeline break
- Provides operational flexibility for pipeline maintenance work
- Improves drinking water reliability

Key performance indicator

1. Install 4 new line valves on treated water distribution pipelines.

Geographic area of benefit: Mountain View, Sunnyvale, Santa Clara, Cupertino, Saratoga, Los Gatos, Los Altos, Campbell, San Jose and Milpitas

Estimated funding from Safe, Clean Water: $7.3 million
Estimated total project cost: $7.3 million

What happens to Priority A projects if the Safe, Clean Water measure does not pass?

Pipeline rehabilitation and upgrades may be delayed or suspended indefinitely. Partnerships and grant projects will not occur.

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Priority B: Reduce toxins, hazards and contaminants in our waterways

Priority B uses multiple strategies to reduce and remove contaminants in our local creeks, streams and bay. In addition to mercury treatment systems in our reservoirs, this priority also prevents toxins from entering waterways in the first place by working with municipalities and other agencies to reduce runoff pollution. The District would also provide grants to reduce emerging contaminants and support public education and volunteer cleanup efforts. Additional projects include coordinated cleanup of illegal encampments near waterways, trash and graffiti removal, and rapid emergency response to hazardous materials spills.

PROJECT B1 Impaired Water Bodies Improvement

This project would help the District meet surface water quality standards and reduce pollutants in streams, groundwater, lakes and reservoirs. Efforts would be carried out in compliance with the Regional Water Quality Control Board (RWQCB) Total Maximum Daily Loads (TMDLs) standards as they continue to evolve (TMDLs are the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards). Under this project the District would employ treatment systems in reservoirs to reduce methylation of mercury, and also help create realistic plans and expectations for reducing contaminant loads by engaging in the regulatory development process with the RWQCB for new and emerging contaminants.

Benefits

- Reduces contamination in creeks and reservoirs
- Improves water quality, including water going to drinking water treatment plants
- Reduces mercury in reservoirs to prevent its entry into the food web
- Improves fisheries by reducing mercury contamination
- Supports regulatory compliance of TMDL standards affecting District operations

Key performance indicators

1. Operate and maintain existing treatment systems in 4 reservoirs to remediate regulated contaminants, including mercury.
2. Prepare plan for the prioritization of pollution prevention and reduction activities.
3. Implement priority pollution prevention and reduction activities identified in the plan in 10 creeks.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $21 million
Estimated total project cost: $21 million





Because of mercury contamination the public is advised against consuming fish caught in some local reservoirs and ponds. Priority B would improve fisheries by reducing mercury loads.



Project B1: Impaired Water Bodies Improvement

- Reservoir treatment systems to reduce mercury contamination and improve fisheries
- Compliance with regulatory safety standards for TMDLs
- Participation in regulatory development process for new and emerging contaminants

Project B2: Interagency Urban Runoff Program

- Community partnerships to reduce runoff contaminants in surface water
- Compliance with regulatory requirements relating to stormwater
- Participation in regulatory development process for urban runoff pollution
- Public outreach and education

PROJECT B2 Interagency Urban Runoff Program

This project supports the District's continued participation in Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and South County programs that help the District reduce stormwater pollution and meet regulatory requirements to reduce contaminants in surface water.

The District would also participate in the regulatory development process related to stormwater by providing review, analysis and commentary on various basin plan amendments, TMDLs and water bodies listed as impaired or threatened under the federal Clean Water Act. Project B2 also allows the District to maintain regional public education and outreach activities to help prevent urban runoff pollution at the source.

Benefits

- Uses partnerships with municipalities and local agencies to reduce contaminants and improve surface water quality in our streams, reservoirs, lakes and wetlands
- Maintains District compliance with RWQCB and National Pollutant Discharge Elimination System (NPDES) permits
- Allows continued participation in SCVURPPP and South County urban runoff programs
- Promotes stormwater pollution prevention through public outreach

Key performance indicators

1. Install at least 2 and operate 4 trash capture devices at stormwater outfalls in Santa Clara County.
2. Maintain partnerships with cities and County to address surface water quality improvements.
3. Support 5 pollution prevention activities to improve surface water quality in Santa Clara County either independently or collaboratively with south county organizations.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $11.4 million
Estimated total project cost: $34.4 million



Oil leaked from a car begins its journey to the storm drain and local waterways. Project B2 provides public education to help prevent runoff pollution at the source.



PROJECT B3 Pollution Prevention Partnerships and Grants

This project would provide pollution prevention grants to qualified local agencies, nonprofit groups, schools, etc., totaling an average of $500,000 per cycle. In addition, up to $200,000 per year would go toward partnerships with municipalities for specific programs to reduce contaminants in surface or groundwater, and reduce emerging contaminants.

Grants could support programs such as public education to prevent pharmaceuticals from entering waterways, technical assistance to help growers protect groundwater, and partnerships to reduce litter and graffiti.

Benefits

- Helps prevent contaminants such as pharmaceuticals, household hazardous waste and trash from entering our waterways
- Helps meet regulatory requirements as listed under the impaired water bodies listing of the federal Clean Water Act
- Reduces contaminant source loads in groundwater and surface water, and protects local watersheds
- Provides public education to reduce contaminants in our waterways
- Leverages community resources for efficient use of funds

Key performance indicator

1. Provide 7 grant cycles and 5 partnerships that follow pre-established competitive criteria related to preventing or removing pollution.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $7.3 million
Estimated total project cost: $7.3 million

Project B3: Pollution Prevention Partnerships and Grants

- **Community partnerships and grants to reduce contaminants, household hazardous waste and trash in waterways**
- **Approximately $500,000 in grants biennially for community pollution prevention projects**
- **$200,000 annually for partnerships with local municipalities to reduce contaminants in surface water**
- **Public education and outreach to help prevent pollutants from entering waterways**



Pollution prevention partnerships and grants would fund projects that help keep pharmaceutical products and other toxic pollutants out of our waterways.



Project B4: Good Neighbor Program – Illegal Encampment Cleanup

- **Partner with local cities and agencies to clean up illegal encampments along waterways**
- **Reduce amount of trash and contaminants entering creeks**
- **Protect community investment in District facilities**

Project B5: Hazardous Materials Management and Response

- **Maintain 24-hour-a-day, seven-day-a-week toll-free number for hazardous materials response**
- **Respond to spills within two hours of notification**

PROJECT B4 Good Neighbor Program: Illegal Encampment Cleanup

This project supports the District's ongoing coordination with local cities and agencies to clean up large illegal creekside encampments that contaminate waterways and damage District facilities. This cooperative effort includes local police departments, social services, and nonprofit advocacy groups that help provide alternatives to homelessness.

Benefits

- Reduces trash and other pollutant loads in surface water, including streams, reservoirs and wetlands
- Improves the aesthetics of creeks in neighborhoods and parks
- Coordinates efforts among multiple agencies to create lasting solutions

Key performance indicator

1. Perform 52 annual cleanups for the duration of the Safe, Clean Water program to reduce the amount of trash and pollutants entering the streams.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $4.1 million
Estimated total project cost: $4.1 million



Illegal encampments harm habitats and pollute waterways. Multi-agency cleanup efforts would help protect our waterways and provide social service assistance.

PROJECT B5 Hazardous Materials Management and Response

Project B5 would allow the District to continue providing a local, toll-free number to report hazardous materials spills 24 hours a day, seven days a week. Emergency staff responds within two hours of the initial report, with spill cleanup in District rights-of-way performed in a timely manner. Appropriate agencies are alerted when spills are outside District jurisdiction.

Benefits

- Prevents and reduces contaminants in surface and groundwater
- Provide a quick, systematic emergency response that reduces negative impacts of hazardous materials spills

Key performance indicator

1. Respond to 100 percent of hazardous materials reports requiring urgent on-site inspection in two hours or less.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $0.5 million
Estimated total project cost: $3.3 million



Project B6: Good Neighbor Program: Remove Graffiti and Litter

- Respond to cleanup requests within five working days
- Provide quarterly cleanups of high-trash areas
- Improve aesthetics in neighborhoods and parks
- Reduce contaminants in local waterways and prevent dumping

PROJECT B6 Good Neighbor Program: Remove Graffiti and Litter

This project would allow the District to continue responding to complaints about illegal dumping, trash and graffiti on District property and rights-of-way. Cleanup efforts include graffiti removal from headwalls, concrete embankments, signs, structures and other District assets, as well as maintaining, repairing and installing fences and gates so that District structures and facilities remain safe and clean. The project also includes quarterly cleanups of problem sites to help reduce waterway pollution and keep creeks and riparian areas free of debris.

Benefits

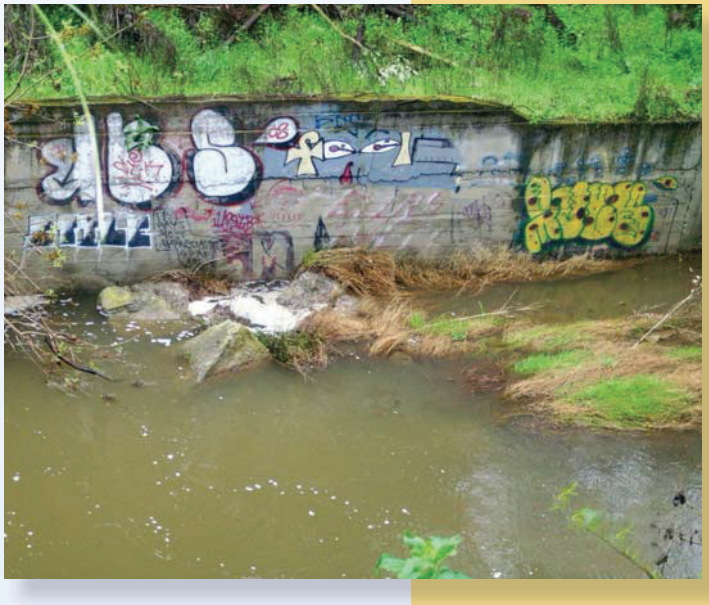
- Reduces trash and contaminants in local waterways
- Improves the appearance of waterways in neighborhoods and parks by removing trash, graffiti and litter as well as illegally dumped items such as cars, shopping carts, appliances, etc.
- Reduces illegal dumping into or near waterways by repairing and installing fencing on District property
- Provides coordinated response to community complaints about trash and graffiti in neighborhoods

Key performance indicators

1. Conduct 60 cleanup events (4 per year).
2. Respond to requests on litter or graffiti cleanup within 5 working days.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $7.8 million
Estimated total project cost: $13.0 million



This unsightly graffiti on a San Francisquito Creek embankment is no longer a blight thanks to the District's Good Neighbor Program. Funding for Priority B will cover continued cleanup of graffiti, litter and illegally dumped items in and around local waterways.



Project B7: Support Volunteer Cleanup Efforts and Education

- **Provide grants and partnerships for watershed stewardship activities**
- **Support community cleanup events**
- **Leverage volunteer community resources**
- **Provide public education and outreach to support stream stewardship**

PROJECT B7 Support Volunteer Cleanup Efforts and Education

Project B7 provides grants and partnerships for cleanup, education, outreach and watershed stewardship activities. Funding would also allow the District to continue supporting volunteer cleanup activities such as National River Cleanup Day, California Coastal Cleanup Day, the Great American Pick Up, and Adopt-A-Creek, as well as Creek Connections Action Group and creekwise education.

Benefits

- Reduces contaminants entering our waterways and groundwater
- Engages community, and supports watershed stewardship
- Leverages volunteer community resources for efficient use of funds

Key performance indicator

1. Provide 7 grant cycles and 3 partnerships that follow pre-established competitive criteria related to cleanups, education and outreach, and stewardship activities.
2. Fund District support of annual National River Cleanup Day, California Coastal Cleanup Day, and the Great American Pick Up; and fund the Adopt-A-Creek program.

Geographic area of benefit: countywide



Priority B would allow the District to continue its support of community cleanup activities which leverage volunteer labor to benefit the community and environment.

Estimated funding from Safe, Clean Water: $2.2 million
Estimated total project cost: $2.2 million

What happens to Priority B projects if the Safe, Clean Water measure does not pass?

Most of the elements in Priority B will have no funding if the proposed special tax does not pass. Partnerships and grants will not be available. Good Neighbor Programs such as trash, litter and graffiti removal will not be funded. Only specific mandated activities that fulfill legal and regulatory requirements will be funded, and this may cause reductions in other service areas.



Priority C: Protect our water supply from earthquakes and natural disasters

Priority C includes retrofitting to protect our water supply infrastructure from the impacts of natural disasters like earthquakes. It also includes emergency flood response enhancements to improve communication between responders and help reduce damages from floods.

PROJECT C1 Anderson Dam Seismic Retrofit

Anderson Reservoir is currently limited to 68 percent of its capacity due to seismic concerns, costing Santa Clara County valuable drinking water resources. This project would cover earthquake retrofitting of Anderson Dam to improve reliability and safety, and return the reservoir to its original storage capacity.

Anderson Dam creates the county's largest surface water reservoir—Anderson Reservoir—which stores local rainfall runoff and imported water from the Central Valley Project. The reservoir is an important water source for treatment plants and the recharge of the groundwater basin. Besides restoring drinking water supplies, the upgrade would also support compliance with environmental regulations. The District's regular reservoir releases ensure that downstream habitat has healthy flows and temperatures to sustain wildlife.

A breach of Anderson Dam at full capacity could have catastrophic consequences, including inundation of surrounding land more than 30 miles northwest to San Francisco Bay, and more than 40 miles southeast to Monterey Bay.

Benefits

- Brings the dam into compliance with today's seismic standards
- Increases reliability and safety of our area's largest reservoir by protecting it from earthquakes
- Eliminates operational restrictions issued by the state Division of Safety of Dams which would restore Anderson Reservoir to its full capacity of approximately 30 billion gallons, regaining 32 percent or 9.3 billion gallons of water storage for our current and future supply
- Ensures compliance with environmental laws requiring reservoir releases that maintain appropriate flows and temperatures to support downstream wildlife habitat
- Minimizes the risk of uncontrollable releases from the reservoir which could cause downstream flooding

Key performance indicator

1. Provide portion of funds, up to $45 million, to help restore full operating reservoir capacity of 90,373 acre-feet.

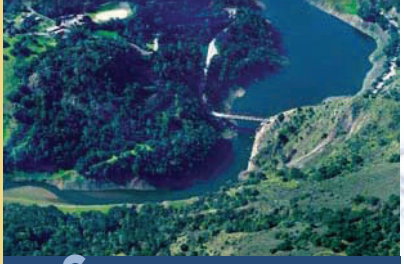
Safe, Clean Water and Natural Flood Protection

Project C1: Anderson Dam Seismic Retrofit

- **Ensure reliability and safety of the county's largest reservoir**
- **Increase water supply by removing capacity restrictions on Anderson Reservoir**
- **Provide reservoir releases to support wildlife and habitat**
- **Protect downstream waterways from flooding**



Core sample drilling was part of the seismic studies which tested the integrity of Anderson Dam and Reservoir. Retrofitting is mandatory to remove safety restrictions and secure the continued operation of the largest surface water storage facility in Santa Clara County.



Project C2: Emergency Response Upgrades

- **Develop automated real-time flood warning system**
- **Reduce flood damage by allowing more time for emergency preparation**
- **Improve coordination of interagency response**
- **Improve accuracy of flood forecasting**

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $45 million
Estimated total project cost: $110 million

PROJECT C2 **Emergency Response Upgrades**

This project would cover the development of an automated flood warning system that uses real-time rainfall data to predict streamflows and potential flood risk. The system would efficiently disseminate information to emergency responders and the public using the web, texting, auto-calls, and other technologies, allowing more time to activate floodfighting measures and reduce flood damage.

Benefits

- Enhances interagency response to storm-related emergencies
- Improves the accuracy of flood forecasting services
- Helps municipalities and neighborhoods lessen flood impacts
- Maintains access to technical resources that assist municipalities with floodplain management
- Promotes community awareness of flood risks
- Implements risk reduction strategies consistent with FEMA's Community Rating System as appropriate



Staff members practice emergency management skills during simulation exercises at the District's Emergency Operations Center. Emergency response upgrades under Priority C would improve coordinated flood response throughout Santa Clara County.

Key performance indicator

1. Map, install, and maintain gauging stations and computer software on seven flood-prone reaches to generate and disseminate flood warnings.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $2.7 million
Estimated total project cost: $2.7 million

What happens to Priority C projects if the Safe, Clean Water measure does not pass?

The seismic retrofitting of Anderson Dam is required by law and will move forward even if the measure does not pass, but funding would have to be pulled from other District operations which may result in a reduction of services. The Emergency Response Upgrades project is fully funded by the measure and will not occur without passage.



Priority D: Restore wildlife habitat and provide open space

D1 Management of Revegetation Projects

D2 Revitalize Stream, Upland and Wetland Habitat

D3 Grants and Partnerships to Restore Wildlife Habitat and Provide Access to Trails

D4 Fish Habitat and Passage Improvement

D5 Ecological Data Collection and Analysis

D6 Creek Restoration and Stabilization

D7 Partnerships for the Conservation of Habitat Lands

D8 South Bay Salt Ponds Restoration Partnership

Priority D: Restore wildlife habitat and provide open space

The eight projects under Priority D restore and protect wildlife habitat and provide opportunities for increased access to trails and open space. Funding for this priority would pay for control of non-native, invasive plants, revegetation of native species, and maintenance of previously revegetated areas. Other projects include removal of fish barriers, improvement of steelhead habitat, and stabilization of eroded creekbanks.

To support these and future restoration projects the District would create a comprehensive, updated database on stream conditions countywide. The District and other agencies could then use the new information to make informed decisions on where and how to use restoration dollars so they have the greatest value for wildlife.

PROJECT D1 Management of Revegetation Projects

This project supports District maintenance of at least 300 acres of existing revegetation projects throughout the five watersheds, and provides for maintenance of future revegetation sites. Funding for this project ensures that design objectives of all revegetation projects are maintained during the establishment period so that mitigation results in functional habitat that can support wildlife.

Benefits

- Maintains 300 acres of existing revegetation
- Allows the District to monitor plant survival and habitat functions
- Complies with environmental laws requiring habitat mitigation for flood protection and water supply projects
- Provides for maintenance of future revegetation sites

Key performance indicator

1. Maintain a minimum of 300 acres of revegetation projects annually to meet regulatory requirements and conditions.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $17.1 million
Estimated total project cost: $29.5 million



Maintaining plants until maturity ensures that they become a functioning part of the ecosystem. Photo shows the District's wetland creation project at Coyote Parkway Wetlands.



Project D1: Management of Revegetation Projects

- **Maintain 300 acres of existing revegetation sites**
- **Support mandatory environmental mitigation requirements**
- **Help revegetation projects thrive to become functional habitat for wildlife**

Project D2: Revitalize Stream, Upland and Wetland Habitat

- **Improve habitat by removing non-native, invasive plants and planting native species on at least 21 acres**
- **Increase connectivity of wildlife corridors**



Habitat improvement under Priority D would benefit numerous native bird, mammal, reptile and amphibian species, as well as threatened steelhead.

PROJECT D2 Revitalize Stream, Upland and Wetland Habitat

Project D2 allows the District to remove non-native, invasive plants, and revegetate habitat with native species when needed. Funding would also restore degraded habitat between revegetated sites to create a more contiguous habitat corridor for wildlife. This project includes targeted control of especially damaging non-native, invasive plant species such as Arundo donax, as well as education for nearby landowners and other stakeholder groups on the control of harmful species. Project D2 would also help implement the Stream Corridor Priority Plans developed in Project D3.

Benefits

- Increases viability of native riparian species by reducing competition from non-native, invasive species
- Improves habitat by installing tidal and riparian plant species
- Improves ecological function of existing riparian and wetland habitat so it can support more diverse wildlife species
- Improves patchy wildlife corridors by increasing connectivity of habitat
- Increases community awareness about the damaging impact that non-native, invasive plants have on local ecosystems

Key performance indicator

1. Revitalize at least 21 acres, guided by the 5 Stream Corridor Priority Plans, through native plant revegetation and removal of invasive exotic species.
2. Provide funding for revitalization of at least 7 of 21 acres through community partnerships.
3. Develop at least 2 plant palettes for use on revegetation projects to support birds and other wildlife.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $14.2 million
Estimated total project cost: $23.9 million

PROJECT D3 Grants and Partnerships to Restore Wildlife Habitat and Provide Access to Trails

Project D3 provides grants and partnerships for activities such as developing Stream Corridor Priority Plans; creating or enhancing wetland, riparian and tidal marsh habitat; protecting special status species; removing fish migration barriers; installing fish ladders; removing non-native, invasive plant species; and planting native species. The project includes seven grant cycles, one held approximately every other year during the 15-year duration of the Safe, Clean Water program, as well as funding for partnerships that restore stream and wetland habitat and provide open space access.



This project would also fund work that provides access to creekside trails or trails that provide a significant link to the creekside trail network, for example, the possible construction of a bridge over Coyote Creek in the Rockspring neighborhood.

Benefits

- Enhances creek and bay ecosystems
- Improves fish passage and habitat
- Expands trail and open space access
- Leverages community funding through grants
- Increases collaborations and partnerships for stewardship activities with cities, the county, nonprofit organizations, schools and other stakeholders

Key performance indicators

1. Develop five Stream Corridor Priority Plans to prioritize stream restoration activities.
2. Provide 7 grant cycles and additional partnerships for $21 million that follow pre-established criteria related to the creation or restoration of wetlands, riparian habitat, and favorable stream conditions for fisheries and wildlife, and providing new public access to trails.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $23.5 million
Estimated total project cost: $23.5 million

PROJECT D4 Fish Habitat and Passage Improvement

This project would help restore and maintain healthy steelhead trout populations by improving fish passage and habitat. Possible work sites include Alamitos Creek at Lake Almaden and Ogier Ponds in the Coyote watershed, where man-made creek alterations disrupt fish migration. The project also includes studies of steelhead streams throughout the county to determine where improvements are needed to support spawning, rearing and migration. Funding would also pay for the development of a program to use large woody debris to create fish habitat.

Benefits

- Improves spawning and rearing habitat within the Coyote, Guadalupe and other watersheds
- Improves steelhead trout habitat
- Helps provide required mitigation for environmental impacts of reservoir and recharge operations

Key Performance Indicators

1. Complete planning and design for two creek/lake separations.
2. Construct one creek/lake separation project in partnership with local agencies.

Safe, Clean Water and Natural Flood Protection

Project D3: Grants and Partnerships to Restore Wildlife Habitat and Provide Access to Trails

- **Leverage community resources to restore and create stream, wetland and tidal marsh habitat; and provide access to open space and trails**
- **Provide seven biennial grant cycles for habitat restoration**
- **Develop a priority list of stream restoration projects**

Project D4: Fish Habitat and Passage Improvement

- **Improve steelhead trout habitat and migration routes, including planning and design of two creek/lake separations**
- **Perform studies of steelhead streams**
- **Develop program to use large woody debris to create fish habitat**



Project D4 would improve passage for threatened steelhead. Here, a fish migrates through the Alamitos fish ladder installed by the District on the upper Guadalupe River in 1999.



Project D5: Ecological Data Collection and Analysis

- **Create comprehensive, ongoing database to track stream conditions in all watersheds in Santa Clara County**
- **Integrate District's stewardship actions across operations**
- **Improve effectiveness of restoration decisions and projects with more accurate data**

Project D6: Creek Restoration and Stabilization

- **Stabilize eroding creekbanks and reduce sedimentation**
- **Reduce maintenance costs for sediment removal and protect infrastructure from damage**
- **Improve natural stream functions**

3. Use $6 million for fish passage improvements.
4. Conduct study of all major steelhead streams in the County to identify priority locations for installation of large woody debris and gravel as appropriate.
5. Install large woody debris and/or gravel at a minimum of 5 sites (1 per each of 5 major watersheds).

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $21.0 million
Estimated total project cost: $24.5 million

PROJECT D5 **Ecological Data Collection and Analysis**

This project would create a comprehensive watershed database that tracks stream ecosystem conditions to help the District and other county agencies and organizations make informed watershed and asset management decisions. This new information would integrate and enhance the District's stewardship actions through a standardized, repeatable and defensible approach that guides, organizes and integrates information on stream conditions.

This ecological monitoring and assessment will be conducted on an ongoing basis, and will be shared with land use agencies, environmental resource groups and the public to support efficient restoration decisions throughout the county.

Benefits

- Improves watershed and asset management decisions
- Provides a systematic, scientific guide for decisions and actions to improve stream conditions
- Supports effective design options for capital projects
- Maximizes the impact of restoration dollars with more reliable data on countywide stream conditions

Key performance indicators

1. Establish new or track existing ecological levels of service for streams in 5 watersheds.
2. Reassess streams in 5 watersheds to determine if ecological levels of service are maintained or improved.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $7.0 million
Estimated total project cost: $10.5 million



Project D5 would track stream conditions throughout the county to increase the effectiveness of restoration decisions and projects.



Project D7: Partnerships for the Conservation of Habitat Lands

- **Provide up to $8 million for purchase of conservation lands**
- **Pool mitigation dollars with other agencies to create larger habitat lands for wildlife**
- **Assist recovery of special status species**
- **Provide mitigation for future water supply and flood protection projects**

PROJECT D6 Creek Restoration and Stabilization

This project would use geomorphic data to design and construct projects to increase the stability of eroding creekbanks and help restore the natural functions of stream channels. Possible work may include the removal of Comer Debris Basin on Calabazas Creek in Saratoga, and activities to reduce and prevent incision and promote sediment balance in Stevens and Uvas Creeks.

Benefits

- Uses scientific principles to restore sediment balance and reduce erosion, instability and sedimentation in creeks
- Helps restore stream functions and improves recharge capability of channels by decreasing sedimentation
- Protects roads from damage caused by eroding channel banks
- Reduces annual maintenance cost for sediment removal

Key performance indicator

1. Construct 3 geomorphic designed projects to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $12.8 million
Estimated total project cost: $12.8 million

PROJECT D7 Partnerships for the Conservation of Habitat Lands

Funding from this project would help the community acquire important habitat land to preserve local ecosystems. The project supports implementation of the Valley Habitat Plan, a multi-agency agreement that pools mitigation dollars to purchase large areas of habitat land for conservation.

Benefits

- Fulfills a portion of the District's acre allocation to the Valley Habitat Plan
- Protects, enhances and restores natural resources in Santa Clara County
- Contributes to the recovery of special status species
- Coordinates regional mitigation projects to create larger, less fragmented conservation lands that are more beneficial for wildlife and the environment
- Provides for endangered species and wetlands mitigation for future water supply and flood protection projects

Key performance indicator

1. Provide up to $8 million for the acquisition of property for the conservation of habitat lands.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $8.0 million
Estimated total project cost: $24.0 million



Erosion and incision like this example along Thompson Creek degrade habitat values and increase sediment loads and maintenance costs.



Project D8: South Bay Salt Ponds Restoration Partnership

- **Partner with U.S. Fish and Wildlife Service to accelerate progress on South Bay Salt Ponds Restoration**
- **Reuse local stream sediments to build and rehabilitate tidal habitat**
- **Reduce disposal costs for sediment removal and increase available landfill space**

PROJECT D8 South Bay Salt Ponds Restoration Partnership

Project D8 would reuse local sediment from streams flowing into San Francisco Bay to create and rehabilitate habitat in the South Bay Salt Ponds Restoration. The District would reuse sediment that has to be removed from streams to maintain their capacity to carry floodwaters. In partnership with the U.S. Fish and Wildlife Service, the clean sediment would be applied to appropriate locations to improve the success of the South Bay Salt Ponds Restoration effort.

Benefits

- Accelerates progress of an important tidal wetland restoration project
- Reduces disposal costs for sediment that has been removed from local channels to maintain flood carrying capacity
- Increases space availability in local landfills

Key Performance Indicators

1. Establish agreement with the U.S. Fish and Wildlife Service to reuse sediment at locations to improve the success of Salt Pond restoration activities.
2. Construct site improvements up to $4 million to allow for transportation and placement of future sediment.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $4.2 million
Estimated total project cost: $4.2 million

What happens to Priority D projects if the Safe, Clean Water measure does not pass?

Many of the projects in this priority will not be funded at all if the proposed special tax does not pass. Partnerships and grant projects will not occur and most activities will be severely curtailed. Only mandated activities will be funded and these will be at the minimally acceptable levels. Fulfilling mandated requirements may also cause reductions in other District service areas.

Photos show salt ponds before and after their restoration to tidal wetland. Project D8 uses stream sediment to restore wetland habitat while at the same time reducing sediment disposal costs.







Priority E: Provide Flood Protection to Homes, Businesses, Schools and Highways

E1 Vegetation Control and Sediment Removal for Flood Protection

E2 Emergency Response Planning

E3 Flood Risk Reduction Studies

E4 Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose

E5 San Francisquito Creek Flood Protection, San Francisco Bay to Middlefield Road – Palo Alto

E6 Upper Llagas Creek Flood Protection, Buena Vista Avenue to Wright Avenue – Morgan Hill, San Martin, Gilroy

E7 San Francisco Bay Shoreline Study– Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara and Sunnyvale

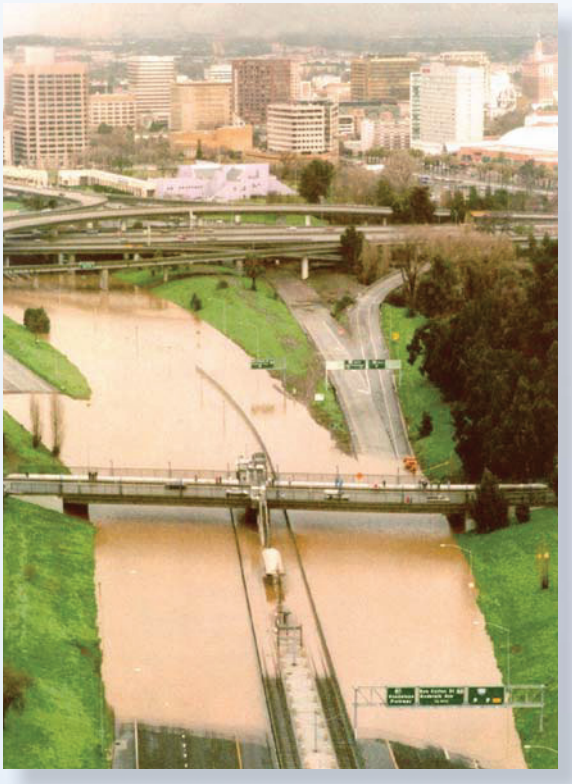
E8 Upper Guadalupe River Flood Protection, Highway 280 to Blossom Hill Road – San Jose

Priority E: Provide flood protection to homes, businesses, schools, and highways

Flood protection measures under Priority E include capital construction projects, studies of flood prone areas, maintenance of existing flood protection channels, and improvements in emergency planning for flood response.

Flood protection capital projects are prioritized to protect the largest number of people, homes and businesses, as well as safeguard the highways, streets, public transportation, and business centers that people depend on for their livelihoods. Flooding history, damage estimates, and economic impacts are all taken into consideration. Five of the eight projects under this priority are capital projects, and three are continued from the 2000 Clean, Safe Creeks plan. All the construction projects under Priority E require federal funding for completion in addition to local funding. Whenever possible the District leverages funds from the state, local municipalities, and other stakeholders. Capital projects E4 through E8 are already in the preliminary stages of design, and costs shown are the best estimates to date.

Priority E also provides for ongoing maintenance so that projects continue to provide the level of flood protection for which they were designed. In addition, Emergency Response Planning will reduce damage from inevitable floods by allowing the District, local cities, and the county to create action plans for flood prone sites.



Besides safeguarding neighborhoods, capital projects under Priority E would protect commuter transportation networks that support livelihoods and the economy. Photo shows Highway 87 and adjacent light rail lines inundated with floodwaters in 1995. Project E8 would protect this area from flooding.



Project E1: Vegetation Control and Sediment Removal for Flood Protection

- **Maintain conveyance capacity of existing flood protection projects**
- **Fund maintenance of projects that will be completed under Safe, Clean Water program**
- **Remove in-stream vegetation and sediment as appropriate**
- **Perform weed abatement in compliance with fire codes**

"On behalf of all my neighbors, I would like to thank you and your organization for cleaning out Llagas Creek when you did . . . If Llagas Creek had not been cleaned out . . . flooding and damage to our homes and property would have been more likely to occur."

—excerpt from letter written by a resident after the District cleared non-native plants from Llagas Creek before March 2011 storms and flooding

PROJECT E1 Vegetation Control and Sediment Removal for Flood Protection

This project supports the District's ongoing vegetation control and sediment removal activities that reduce flood risk by maintaining design conveyance capacity of flood protection projects. These activities also provide access for maintenance personnel and equipment. The project includes: controlling in-stream vegetation growth, removing sediment at appropriate intervals, removing hazardous trees, and performing weed abatement and pruning to provide access and establish firebreaks. Before carrying out in-stream maintenance, District personnel perform biological pre-construction surveys to minimize environmental impacts. Allocations for Project E1 would also help fund future maintenance of flood protection projects completed under the Safe, Clean Water program.

Benefits

- Ensures that existing flood protection projects continue to provide maximum flood protection
- Provides safe access for maintenance of creek channels
- Reduces fire risk along creeks and maintains compliance with fire codes
- Improves water quality

Key performance indicators

1. Maintain 90 percent of improved channels at design capacity.
2. Provide vegetation management for 6,120 acres along levee and maintenance roads.

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $35.6 million
Estimated total project cost: $111.1 million



Personnel remove accumulated sediment from a Ross Creek culvert to maintain the channel's floodwater carrying capacity.



Project E2: Emergency Response Planning

- **Improve interagency response to flood events**
- **Develop communication procedures and web information**
- **Develop site-specific flood-fighting action plans for five watersheds**
- **Coordinate public outreach for uniform emergency messages**

PROJECT E2 **Emergency Response Planning**

This project allows the District to work with local municipalities to clearly identify roles and responsibilities for floodplain management and flood emergency management. The project would support countywide emergency response and preparedness activities, and it would develop communication procedures and disseminate web-based flood forecasting information developed under Project C2, Emergency Response Upgrades. Collaborators would also develop formal, site-specific flood-fighting strategies and coordinate outreach throughout the county so that the public receives uniform flood warning messages.

Benefits

- Reduces flood damage
- Provides effective coordinated response to storm-related emergencies
- Improves community awareness about flood risks

Key performance indicators

1. Coordinate with agencies to incorporate District-endorsed flood emergency procedures into their Emergency Operations Center plans.
2. Complete 5 flood-fighting action plans (one per major watershed).

Geographic area of benefit: countywide

Estimated funding from Safe, Clean Water: $3.1 million
Estimated total project cost: $3.1 million



Project E2 would develop floodfighting action plans to improve emergency response. Here, personnel deploy a bladder dam during a practice drill to protect neighborhoods near the upper Guadalupe River.



Project E3: Flood Risk Reduction Studies

- **Perform hydrological, hydraulic, and geotechnical studies on seven creek reaches**
- **Develop risk management strategies for four flood-prone areas in San Jose and Milpitas**
- **Update floodplain maps using scientific data and new FEMA guidelines**

PROJECT E3 **Flood Risk Reduction Studies**

This project would develop engineering studies to increase understanding of flood risks in high priority, flood-prone areas, and develop options for managing those risks. The studies will focus on four areas:

- The Rockspring neighborhood along Coyote Creek in San Jose;
- Alamitos Creek, upstream of Lake Almaden in San Jose;
- Calera Creek, from Milpitas High School to Interstate 680 in Milpitas; and
- tributaries to Lower Silver Creek (Ruby, Norwood, Quimby and Fowler Creeks) in San Jose.

Studies would include hydrologic, hydraulic and geotechnical data, and remapping work of the floodplain areas. If appropriate, updated maps would be submitted to the Federal Emergency Management Agency (FEMA) to more accurately reflect the floodplain.

Flooding history and project background

In 1997, the Rockspring neighborhood suffered severe flood damages to approximately 25 low-income apartment buildings. A subsequent study investigated the flooding problem and offered possible solutions. With the additional planning and partial design from Project E3, the District would be well-positioned to apply for future grants and/or partnerships to complete the needed flood protection work in this neighborhood.

Alamitos and Calera Creeks were modified with levees and floodwalls about 30 years ago, but their designs do not meet current FEMA guidelines which were published after the projects were built. Both the Alamitos and Calera neighborhoods are mapped as regulatory floodplains. In 2012, FEMA released new draft technical guidance for mapping floodplains behind levees; these new guidelines may significantly reduce the size of the regulatory floodplains for Alamitos and Calera Creeks, but a study is needed to qualify for updated regulatory mapping.

Every winter, thousands of households, schools and businesses in San Jose are susceptible to flood damage in the Lower Silver Creek watershed. While the District is improving the flood carrying capacity of Lower Silver Creek itself, the smaller tributaries continue to pose a flood risk. Project E3 would map and quantify these flood risks and identify possible solutions that may also provide environmental or recreational benefits.

Benefits

- Provides more accurate mapping of areas at risk of flooding
- May remove hundreds of parcels from FEMA regulatory floodplain, based on updated mapping standards
- Information can be integrated into flood warning program to provide advance, real-time warnings of impending flood events
- Provides technical basis for developing future flood protection plans, and for potential funding partnerships

Scientific studies could help the District secure future grants and partnerships to prevent devastating events like this one in 1998, when Calera Creek flooded Milpitas.



Key performance indicators

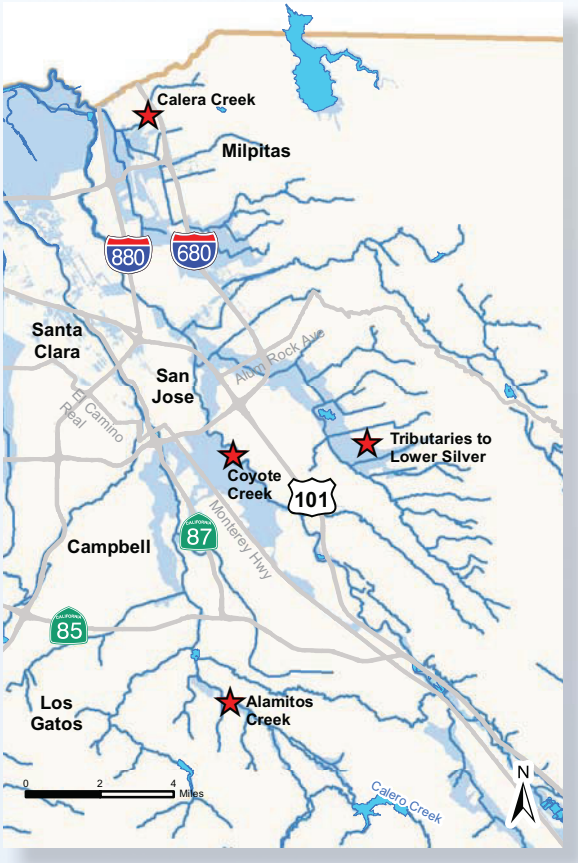
1. Complete engineering studies on 7 creek reaches to address 1 percent flood risk.
2. Update floodplain maps on a minimum of 2 creek reaches in accordance with new FEMA standards.

Geographic area of benefit: Milpitas and San Jose

Estimated funding from Safe, Clean Water: $7.9 million
Estimated total project cost: $7.9 million



Twenty-five low-income apartment buildings in the Rockspring neighborhood suffered severe flood damages when Coyote Creek spilled its banks in 1997.



Studies under project E3 will remap floodplains and provide design solutions for high-risk areas of San Jose and Milpitas.



Project E4: Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose

- **Partner with U.S. Army Corps of Engineers and the state to construct flood protection along 4.2 miles of creek**
- **Provide 100-year flood protection to approximately 5,000 homes, schools and businesses**
- **Protect proposed site of new rapid transit station**
- **Improve water quality and reduce sedimentation**
- **Preserve natural creek channel and adjacent park and recreation lands**

PROJECT E4 Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose

Preferred project: A federal-state-local partnership

This project continues a partnership with the U.S. Army Corps of Engineers (Corps) to plan, design and construct improvements along 4.2 miles of Upper Penitencia Creek from the confluence with Coyote Creek to Dorel Drive. The project will also be funded in partnership with the state. Part of the project must be completed prior to a planned Silicon Valley Rapid Transit extension to the Bay Area Rapid Transit line, to protect the area around the proposed Berryessa station near King Road which would otherwise be subject to flooding.

The natural creek channel would be preserved while adjacent existing open space and parkland would remain as recreational areas, only rarely acting as a temporary floodplain so that floodwaters do not enter surrounding neighborhoods and commercial areas. Proposed construction measures may include modified floodplains, levees, flood walls, bypass channels, and fish passage improvements. Existing District water supply facilities may also be modified to protect habitat and improve water supply reliability.

The $41.9 million in local funding from Safe, Clean Water would allow the District to move ahead with the planning, design and construction of the project. Without local funding, work will not proceed beyond the currently funded feasibility planning stage.

Flooding history and project background

Upper Penitencia is a major tributary of Coyote Creek, flowing westerly from Alum Rock Park through the residential neighborhoods of Berryessa and Alum Rock in San Jose. More than 5,000 homes, schools and businesses are located in this floodplain, including many high-tech and commercial industries supporting the greater Silicon Valley.

With the capacity to carry less than a 10-year event, Upper Penitencia Creek has spilled its banks at least seven times since the District began preparing flood reports in 1967. Damaging flood events occurred in 1978, 1980, 1982, 1983, 1986, 1995, and 1998, impacting many homes, businesses and surface streets. Potential damages from a 100-year flood event are estimated at $455 million (in 2004 dollars, according to a Corps economic analysis), with average annual damages estimated at $30.5 million for the full reach from the Coyote Creek confluence to Dorel Drive.

Upper Penitencia Creek has flooded at least seven times since 1967. Damages from a 100-year flood are estimated at $455 million.



The preferred project would build on a 1981 tri-party agreement between the District, the City of San Jose, and Santa Clara County to preserve open land and provide flood protection along the Upper Penitencia Creek corridor. As a result of the agreement, 78 acres have been permanently preserved as Penitencia Creek County Park and Penitencia Creek Trail. A four-mile, intermittent trail follows Upper Penitencia Creek from 700-acre Alum Rock Regional Park to its confluence with Coyote Creek. In addition to much-needed flood protection, this project will help provide the opportunity for the City of San Jose and Santa Clara County to complete the long-planned trail and linear park.

Benefits

- Preferred project provides 100-year flood protection to approximately 5,000 homes, schools and businesses. Locally-funded-only project provides 100-year flood protection to the proposed rapid transit station and areas downstream from King Road
- Reduces sedimentation and maintenance requirements
- Improves water quality in Coyote Creek
- Provides opportunities for recreation improvements consistent with the City of San Jose and Santa Clara County Park master plans

Key performance indicators

1. **Preferred project with federal and local funding:** Construct a flood protection project to provide 1 percent flood protection to 5,000 homes, businesses and public buildings.
2. **With local funding only:** Acquire all necessary rights-of-way and construct a 1 percent flood protection project from Coyote Creek confluence to King Road.

This is a federal-state-local partnership, relying on federal funding and participation to achieve the full scope, with reimbursements anticipated from the state. However, if local funding alone is available, the project will be reduced in scope. Each year in its annual review of the Safe, Clean Water program, the District Board will assess the funding status and determine the appropriate strategy to follow.

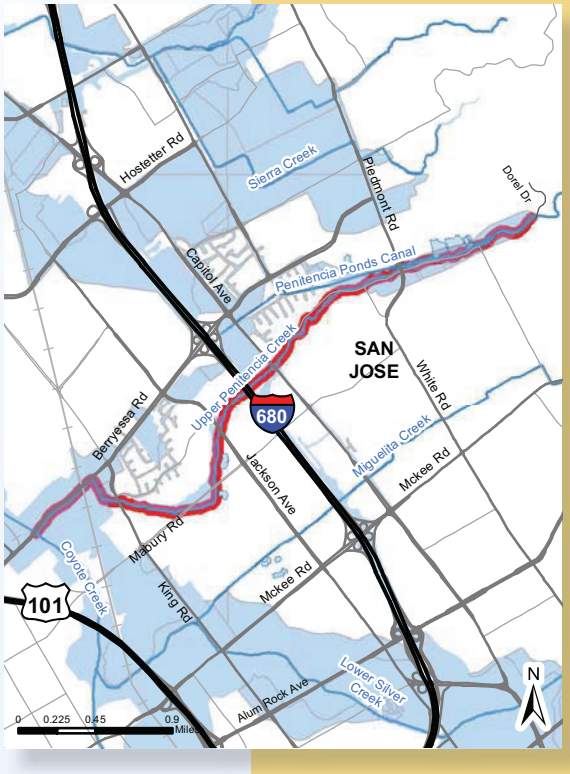
What if no federal funding is available?

The federally authorized project is the preferred project. However, if only local funding alone is available, the project would be narrowed in scope to construct the downstream-most reach, which would provide 1 percent level of protection from the confluence of Coyote Creek to King Road. This would protect the future rapid transit station and neighboring areas. Funding for the local-only plan would also be used to secure required property for the full project reach (to Dorel Drive), in anticipation of future federal funding that would allow construction of the full project.

Geographic area of benefit: San Jose

Estimated funding from Safe, Clean Water: $41.9 million
Estimated total project cost: $139.5 million*

**The $97.6 million in additional funds required to complete the project are comprised of: previous District expenditures and federal funding from the Corps (previous and anticipated). This project is eligible for state subvention reimbursements. However, subvention funds are uncertain and have not been accounted for in the finances of the Safe, Clean Water program.*



The Upper Penitencia project would construct improvements along 4.2 miles of the creek from the confluence with Coyote Creek to Dorel Drive.



Project E5: San Francisquito Creek Flood Protection, San Francisco Bay to Middlefield Road – Palo Alto

- **Protect approximately 3,000 parcels from flooding**
- **Leverage funding through cost shares and grants**
- **Reduce bank erosion and sedimentation**
- **Improve habitat for steelhead and other endangered species**
- **Improve stream water quality**
- **Identify areas to integrate recreational opportunities**

PROJECT E5 San Francisquito Creek Flood Protection, San Francisco Bay to Middlefield Road – Palo Alto

Preferred project: A federal-state-local partnership

This project would complete construction of setback levees and floodwalls from San Francisco Bay to Highway 101 to provide 100-year flood protection and ecosystem benefits. Upstream of Highway 101 the project would provide 1 percent flood protection, ecosystem protection and recreational benefits.

The work would remedy channel constrictions and modify bridges at University Avenue, Newell Road, Middlefield Road and Pope/Chaucer Street. The project is sponsored by the San Francisquito Creek Joint Powers Authority, of which the District is a member agency, in partnership with the U.S. Army Corps of Engineers (Corps). The project builds on the planning and design tasks initiated as part of the Clean, Safe Creeks plan, which are on track to be completed.

Flooding history and project background

San Francisquito Creek is one of the last continuous riparian corridors on the San Francisco Peninsula, and is also home to one of the few remaining viable steelhead trout runs. The creek can cause severe flood damage with very little warning and has overflowed seven times since 1910.

During the February 1998 El Niño event, record flooding caused an estimated $28 million in damages in Palo Alto, East Palo Alto and Menlo Park. More than 1,100 homes were flooded in Palo Alto, and Highway 101 was closed, as were numerous other roadways. The largest flood on record prior to 1998 occurred in December of 1955 when the creek overtopped its banks in several locations, inundating about 1,200 acres of commercial and residential property. Damages were estimated at nearly $2 million in 1956 dollars. Total damages from a 100-year flood event are estimated at $300 million in Santa Clara and San Mateo Counties, as calculated by the Corps in 2011.

The 1998 flooding of San Francisquito Creek closed Highway 101 and caused an estimated $28 million in damages.



Benefits

- Provides 1 percent flood protection for approximately 3,000 homes and businesses in Palo Alto
- Reduces bank erosion and sedimentation-related impacts along San Francisquito Creek
- Provides new or improved habitats for endangered species
- Improves water quality
- Enhances recreational opportunities for the community
- Leverages dollars via cost-shares and grants from the State Department of Water Resources and the California Department of Transportation

Key performance indicators

1. **Preferred project with federal and local funding:** Protect more than 3,000 parcels by providing 1 percent flood protection.
2. **With local funding only:** Protect approximately 3,000 parcels from flooding (100-year protection downstream of Highway 101, and 50-year protection upstream of Highway 101).

This is a federal-state-local partnership, relying on federal funding and participation to achieve the full scope, with reimbursements anticipated from the state. However, if local funding alone is available, the project will be reduced in scope. Each year in its annual review of the Safe, Clean Water program, the District Board will assess the funding status and determine the appropriate strategy to follow.

What if no federal funding is available?

The local-funding-only project will be the same as the preferred project downstream of Highway 101, but upstream of Highway 101 it will provide 2 percent (50-year) flood protection, rather than 1 percent (100-year) protection to approximately 3,000 parcels in Palo Alto.

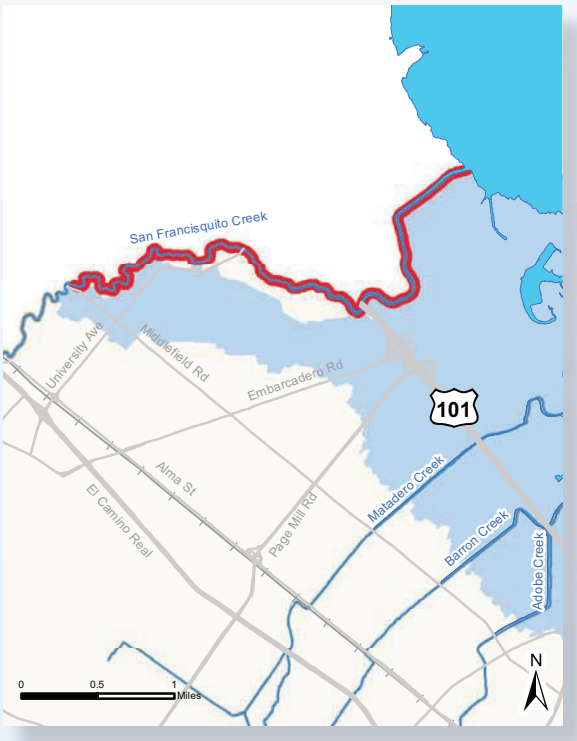
Geographic area of benefit: Palo Alto

Estimated funding from Safe, Clean Water: $35.5 million
Estimated total project cost: $128 million*

**The $92.5 million in additional funds required to complete the project are comprised of: previous District expenditures under the Clean, Safe Creeks plan, state grant funds and local partnerships under the JPA, and anticipated federal funding from the Corps. This project may be eligible for state subvention reimbursements. However, subvention funds are uncertain and have not been accounted for in the finances of the Safe, Clean Water program.*



A debris deflector protrudes up from beneath the Bayshore Freeway bridge, where it prevents the accumulation of flood debris that can block water flow and cause flooding to nearby homes. The facing page photo shows debris accumulating at this same bridge before the deflector was installed.



The preferred project will provide 1 percent flood protection from San Francisco Bay to Middlefield Road in Palo Alto.



Project E6: Upper Llagas Creek Flood Protection, Buena Vista Avenue to Wright Avenue – Morgan Hill, San Martin, Gilroy

- **Construct flood protection improvements along 12.5 miles of channel**
- **Provide 100-year flood protection for approximately 1,100 homes and 500 businesses in downtown Morgan Hill**
- **Provide 10-year flood protection to approximately 1,300 agricultural acres in Morgan Hill ,Gilroy and San Martin**
- **Identify opportunities to integrate recreational opportunities**
- **Improve stream habitat and support fisheries**

PROJECT E6 Upper Llagas Creek Flood Protection, Buena Vista Avenue to Wright Avenue – Morgan Hill, San Martin, Gilroy

Preferred project: a federal-state-local partnership

This project continues a Clean, Safe Creeks project in partnership with the U.S. Army Corps of Engineers (Corps) and the state to plan, design, and construct improvements along 12.5 miles of channel extending from Buena Vista Avenue to Wright Avenue, including West Little Llagas Creek in downtown Morgan Hill. The federally authorized preferred project protects the urban area of Morgan Hill from a 1 percent flood, and reduces the frequency of flooding in surrounding areas. Construction would include channel modifications and replacement of road crossings. The District will continue to work with Congress to aggressively pursue federal funds to bring this project to full fruition.

Flooding history and project background

The area sustained damage in 1937, 1955, 1958, 1962, 1963, 1969, 1982, 1986, 1996, 1997, 1998, 2002, 2004, 2008, 2009 and 2011. In 2009, many businesses and residences in downtown Morgan Hill were flooded under one foot of water. The project builds on the planning, design and property acquisition initiated under the Clean, Safe Creeks plan of 2000, which, along with limited construction, are on schedule for completion.

Benefits

- Preferred project provides 100-year flood capacity for four miles of channel in downtown Morgan Hill, protecting approximately 1,100 homes and 500 businesses
- Preferred project provides up to 10-year flood protection to approximately 1,300 agricultural acres in Morgan Hill, Gilroy and San Martin
- Locally-funded-only project provides 100-year flood protection for a limited number of homes and businesses in Morgan Hill
- Improves stream habitat and fisheries
- Creates additional wetlands
- Improves stream water quality
- Identifies opportunities to integrate recreation improvements with the City of Morgan Hill and others as appropriate



Photo shows flooding along Monterey Road in Morgan Hill in 2009. Channel modifications on the Upper Llagas would provide protection up to a 100-year flood.

Key performance indicators

1. **Preferred project with federal and local funding:** Provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat.
2. **With local funding only**: Provide 100-year flood protection for Reach 7 only (up to W. Dunne Avenue in Morgan Hill). A limited number of homes and businesses will be protected.

This is a federal-state-local partnership, relying on federal funding and participation to achieve the full scope, with reimbursements anticipated from the state. However, if local funding alone is available, the project will be reduced in scope. Each year in its annual review of the Safe, Clean Water program, the District Board will assess the funding status and determine the appropriate strategy to follow.

The Upper Llagas project continues the construction of flood improvements along 12.5 miles of channel extending from Buena Vista Avenue to Wright Avenue, including West Little Llagas Creek in downtown Morgan Hill.

What if no federal funding is available?

If there is no additional financial assistance from the Corps, the District will continue moving the project forward by using local Safe, Clean Water funding to provide 100-year flood protection for Reach 7 up to West Dunne Avenue in Morgan Hill. This reduced-scale project would support future construction of the full preferred project at a later date. The District will endeavor to keep the Corps as a federal partner, as this would allow the District to collect reimbursements from the state for rights-of-way expenditures.

Geographic area of benefit: Morgan Hill, San Martin and Gilroy

Estimated funding from Safe, Clean Water: $39 million
Estimated total project cost: $105 million*

**The $66 million additional funds required to complete the project are comprised of: previous and anticipated District expenditures (Clean, Safe Creeks and other), funding from the City of Morgan Hill, and federal funding from the Corps (previous and anticipated). This project is eligible for state subvention reimbursements; some reimbursements have already been applied for and/or approved by the state. Reimbursements of $9 million are accounted for as anticipated revenue in the first years of the new program. A minimum of $20 million in state reimbursements are anticipated to be approved during the Safe, Clean Water program and have been accounted for as a reduction in the total cost of this project. Additional funds beyond what have already been identified may be required to complete this project.*





Project E7: San Francisco Bay Shoreline Study – Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara and Sunnyvale

- **Provide flood protection for 500 structures and 37 businesses, including important economic centers**
- **Protect vital infrastructure including roads, highways, parks, airports and sewage treatment plants**
- **Planning and design for restoration of 2,240 acres of salt ponds back to tidal marsh and related habitats**
- **Provide recreational opportunities and public access for wildlife viewing**

PROJECT E7 San Francisco Bay Shoreline Study – Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara and Sunnyvale

This project is a partnership with the California State Coastal Conservancy, the U.S. Army Corps of Engineers (Corps) and regional stakeholders. The purpose of the San Francisco Bay Shoreline Study is to: provide tidal flood protection, restore and enhance tidal marsh and related habitats, and provide recreational and public access opportunities. Initial construction for flood protection is planned for "Economic Impact Area 11," which is the urban area of North San Jose and the community of Alviso (EIA11).

The project will rely on federal participation from the Corps to review and approve the plans. Without federal participation, the District cannot implement additional planning, design and construction due to limited available funding. The proposed Safe, Clean Water funding will provide the District's cost share to complete the planning study for the full project area, and will provide a portion of the District's cost share toward construction of flood protection improvements in the North San Jose (EIA11) area, in and near Alviso.

Flooding history and project background

This project stems from the 2003 acquisition of thousands of acres of former South Bay salt production ponds, purchased for restoration with combined public and private funding. The South Bay Shoreline Study is an important component of the South Bay Salt Ponds Restoration Project, a large, multi-agency effort to restore 16,500 acres of tidal wetlands which involves all South Bay cities that meet the San Francisco Bay.

Without incorporating flood protection measures, proposed recreational use and environmental restoration is likely to reduce the effectiveness of existing shoreline levees formerly maintained for salt production. Project E7 would upgrade levees to protect Silicon Valley's "Golden Triangle," bounded by Highways 101, 237 and

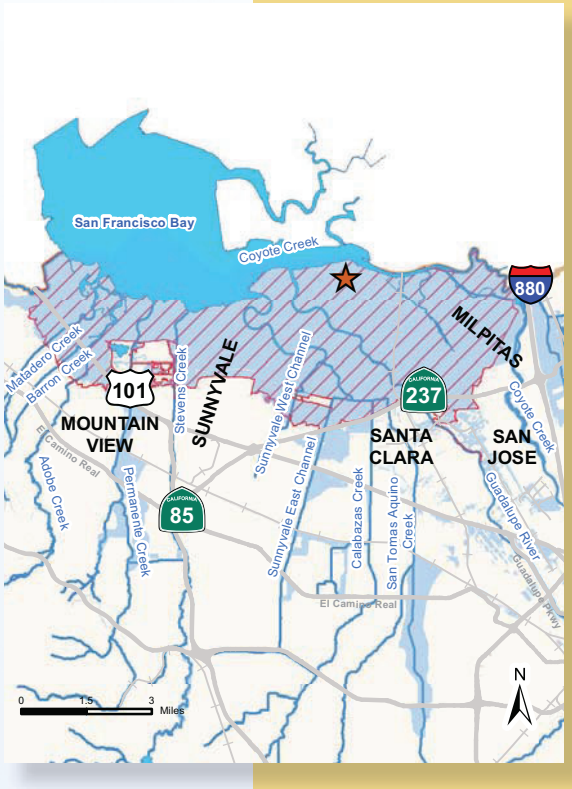


Levee upgrades in project E7 will allow the South Bay Salt Ponds Restoration project to move forward without increasing flood risks to homes and businesses.

880, and extending north into the baylands of Milpitas. Multiple flood events since the mid-1990s have damaged business operations in this area, now home to major high-tech corporations including Intel, Google, Yahoo, Cisco and others. The project would also protect Alviso neighborhoods, as well as important infrastructure such as airports and sewage treatment plants.

The existing multi-agency partnerships for the South Bay Salt Ponds Restoration project and the San Francisco Bay Shoreline Study ensure that all goals for this largest wetland restoration on the West Coast will be incorporated. The Safe, Clean Water measure would provide a share of the total funding needed for planning and design phases for the full shoreline project area. It would also provide the funding needed to purchase lands, easements and rights-of-way as necessary to construct improvements in EIA11, and a share of the construction costs for that portion of the project.

The San Francisco Bay shoreline study area includes the economically important high-tech industries in Silicon Valley's "Golden Triangle," as well as airports, sewage treatment plants and other vital infrastructure.


San Francisco Bay
Coyote Creek
880
MILPITAS
Guadalupe River
Coyote Creek
Alameda Creek
Lower Penitencia Creek
Upper Penitencia Creek
Berryessa Creek
Calaveras Reservoir
Arroyo Hondo
Arroyo Del Valle
Arroyo Las Positas
Arroyo De La Laguna
Arroyo Mocho
Arroyo Valle
Arroyo Del Cañada



Project E8: Upper Guadalupe River Flood Protection, Highway 280 to Blossom Hill Road – San Jose

- **Protect approximately 6,280 homes, 320 businesses and 10 schools and institutions**
- **Provide 1 percent flood protection along 5.5 miles of channel in San Jose**
- **Design and construct flood protection for Reach 7 in Willow Glen**
- **Improve 12 miles of fish habitat inside and upstream of project reach**
- **Improve stream water quality**
- **Allow for creekside trail access**

PROJECT E8 Upper Guadalupe River Flood Protection, Highway 280 to Blossom Hill Road – San Jose

Preferred project: A federal-state-local partnership

This project is federally authorized and continues a 2000 Clean, Safe Creeks project in partnership with the U.S. Army Corps of Engineers (Corps) to plan, design and construct improvements along 5.5 miles of channel extending from Interstate 280 to Blossom Hill Road. Improvements include channel widening, construction of floodwalls and levees, replacement of road crossings and planting of streamside vegetation. Reducing flood frequency and bank erosion will improve water quality, while planned mitigation measures will give fish access to an additional 12 miles of habitat within and upstream of the project reach.

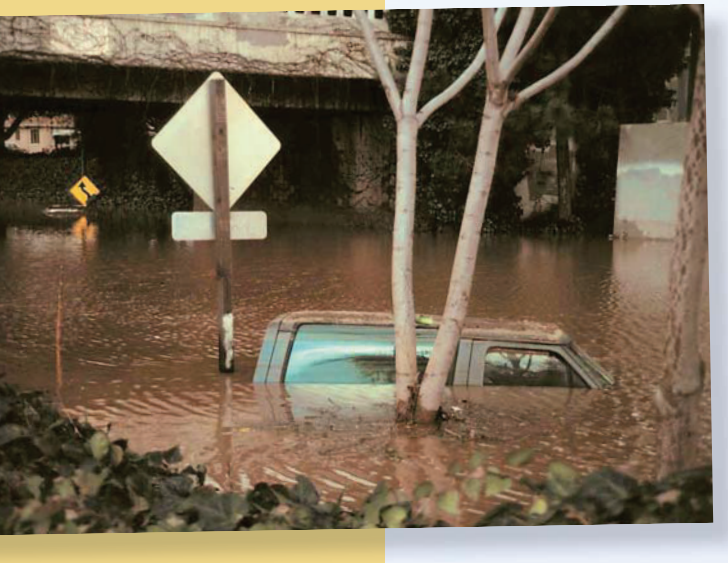
Flooding history and project background

Damaging flood events occurred in 1982, 1983, 1986, 1995 and 1998. Severe flooding in 1995 damaged more than 150 homes in the Gardner, Willow Glen, and South San Jose residential districts, and shut down Highway 87 and the parallel light rail line—both major commuter thoroughfares. Freeway and light rail flooding occurred again in 1998.

The Upper Guadalupe River Flood Protection project was authorized for construction by the Corps in 1999 and received local funding in 2000, followed by the start of construction in 2008. Fish passage, erosion protection and other components were constructed earlier.

To increase the level of flood protection while keeping the preferred project viable, the local-only plan funded by Clean, Safe Creeks was modified by the District Board in March 2012 to provide a basis to advance the full federal project as soon as funds become available. The plan is now to acquire all necessary rights-of-way and relocate bridges and utilities in preparation for the full, preferred project. The modified plan also includes design and construction for both Reach 6 (Interstate 280 to the Union Pacific Railroad crossing) and Reach 12 (Branham Lane to Blossom Hill Road).

Flooding along the Upper Guadalupe River inundates homes, businesses and important commuter highways and light rail lines.



Benefits

- Preferred project will construct 1 percent flood conveyance capacity for 5.5 miles of channel in San Jose, protecting approximately 6,280 homes, 320 businesses and 10 schools/institutions
- Local funding only constructs improvements to 4,100 linear feet to convey 1 percent flow
- Improves stream habitat values and fisheries
- Improves stream water quality
- Allows for creekside trail access

Key performance indicators

1. Preferred project with federal and local funding: Construct a flood protection project to provide 1 percent flood protection to 6,280 homes, 320 businesses and 10 schools and institutions.

2. **With local funding only**: Construct flood protection improvements along 4,100 feet of Guadalupe River between the Southern Pacific Railroad crossing downstream of Willow Street to the Union Pacific Railroad crossing downstream of Padres Drive. Flood damage will be reduced; however, protection from the 1 percent flood is not provided until completion of the entire Upper Guadalupe River project.

This is a federal-state-local partnership, relying on federal funding and participation to achieve the full scope, with reimbursements anticipated from the state. However, if local funding alone is available, the project will be reduced in scope. Each year in its annual review of the Safe, Clean Water program, the District Board will assess the funding status and determine the appropriate strategy to follow.

What if no federal funding is available?

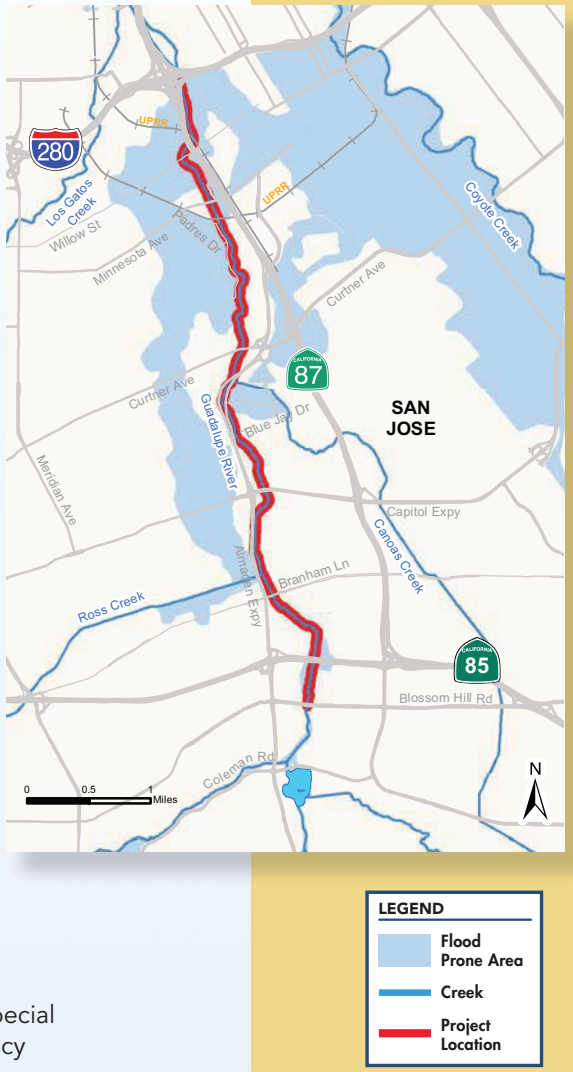
If federal assistance is not forthcoming, the District would use local Safe, Clean Water funds to construct part of the full, preferred project and to acquire the rights-of-way for the full project. The Safe, Clean Water program proposes an additional $18.3 million in local funding to complete much-needed flood protection on Reach 7 in Willow Glen, from the Southern Pacific Railroad crossing downstream of Willow Street to the Union Pacific Railroad crossing downstream of Padres Drive. Construction of this reach and acquisition of rights-of-way must be completed before construction of the full project further upstream. When funding becomes available for the complete, federally authorized project, the remaining reaches will be constructed to achieve the full benefits described above.

Geographic area of benefit: San Jose

Estimated funding from Safe, Clean Water: $18.3 million
Estimated total project cost: $320.6 million*

**The $302.3 million in additional funds required to complete the project are comprised of: previous District expenditures under the Clean, Safe Creeks plan, funding from the City of San Jose, and federal funding from the Corps (previous and anticipated). This project is eligible for state subvention reimbursements; some reimbursements have already been applied for and/or approved by the state. Reimbursements of $28 million are accounted for as anticipated revenue in the first years of the new program.*

The Upper Guadalupe project would provide improvements along 5.5 miles of channel extending from Interstate 280 to Blossom Hill Road.

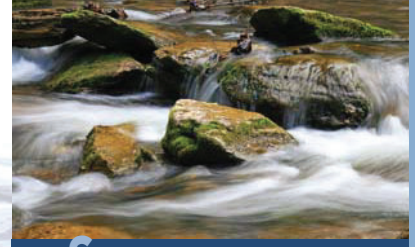


What happens to Priority E projects if the Safe, Clean Water measure does not pass?

Some of the projects in this priority will not be funded at all if the proposed special tax does not pass. Maintenance of existing projects will be curtailed. Emergency planning and coordination for known flood risk areas will have much lower chance of funding. Few, if any flood risk studies will be initiated in the near future. Capital flood protection projects, all of which have already been initiated and authorized for federal funding, will slow significantly or be stopped altogether, pending alternate sources of funding. Up to 15,000 homes, schools and businesses that could be protected from flooding will remain at risk.

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Financing the program



Safe, Clean Water and Natural Flood Protection

Financial highlights

- **Safe, Clean Water renews the expiring special parcel tax approved by voters in 2000.**
- **Renews existing parcel tax without increasing the tax rate**
- **Will fund approximately $485 million in capital projects and $190 million in operating projects, both continued and new**
- **Is expected to leverage over $400 million in federal and state funds for local capital projects** *(Cont.)*

The Safe, Clean Water and Natural Flood Protection program (Safe, Clean Water) replaces the Clean, Safe Creeks and Natural Flood Protection plan (Clean, Safe Creeks), which has been funded by a special parcel tax approved by voters in 2000. If the proposed Safe, Clean Water program is approved by voters in November 2012, revenue will continue to be collected at the same rates as under the Clean, Safe Creeks plan. The Safe, Clean Water program replaces the Clean, Safe Creeks plan, and commitments made in the Clean, Safe Creeks measure will be completed as part of Safe, Clean Water during approximately the first five years of the program.

The program is expected to fund an estimated $485 million in capital projects and $190 million in operating projects, both continued and new. Safe, Clean Water projects and their anticipated costs are described in section four of this document, *Introducing the Safe, Clean Water Program.*

This financial section provides an overview of the Safe, Clean Water program including revenues, financing, expenditures, special tax rate structure, and details on the transition from the Clean, Safe Creeks plan to the Safe, Clean Water program. Unless stated otherwise, all currency in this section is provided in 2012 dollars.

Financial highlights

Continuation of the special parcel tax at same rate

The Safe, Clean Water program is a continuation of the Clean, Safe Creeks special parcel tax. As a continuation, parcel taxes will continue to be assessed at the same



The Safe, Clean Water program includes numerous grants and partnerships that leverage funding to increase benefits. Shown here is the opening ceremony of the Stevens Creek Trail in Mountain View, which was built with help from District grants administered under the previous Clean, Safe Creeks plan.

rates as under the existing plan. ***Table 5-1*** below illustrates this by showing 2014 parcel tax rates by land use category for both measures. Note that taxes will only be assessed and collected on the measure in effect in 2014—either Clean, Safe Creeks or Safe, Clean Water, if it passes.

Table 5-1 Parcel Tax Rates Comparison – No Change Under Proposed Program Clean, Safe Creeks vs. Safe, Clean Water

Land Use Category*	Clean, Safe Creeks Parcel Tax July 1, 2013 – June 30, 2014			Safe, Clean Water Parcel Tax July 1, 2013 – June 30, 2014			Difference
	Minimum Charge for ¼ Acre or Less	Minimum Charge for 10 Acres or Less	Rate per Acre Over Minimum	Minimum Charge for ¼ Acre or Less	Minimum Charge for 10 Acres or Less	Rate per Acre Over Minimum	All Categories
Group A- Commercial and Industrial	$111.68	-	$446.720	$111.68	-	$446.720	No Change
Group B- Condominiums and Townhouses	$26.80	-	$335.040	$26.80	-	$335.040	No Change
Group B- Apartments, Mobile Homes, Churches	$83.76	-	$335.040	$83.76	-	$335.040-	No Change
Group C- Residential (Single Family to 4 Units)	$55.84	-	$2.792	$55.84	-	$2.792	No Change
Group D- Agricultural Acreage	-	$27.92	$2.792	-	$27.92	$2.792	No Change
Group E- Undisturbed/ Non-utilized Agriculture, Marsh, Ponds – Urban	$8.38	-	$0.838	$8.38	-	$0.838	No Change
Group E- Undisturbed, Grazing, Brush, Forest – Rural	-	$8.38	$0.105	-	$8.38	$0.105	No Change
Group F- Well site for residential uses	-	-	-	-	-	-	No Change

*Land use categories are described in Resolution No. 12-62, provided in Appendix E.

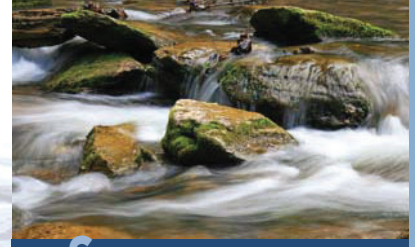
As a continuation of Clean, Safe Creeks, the Safe, Clean Water program will continue to assess parcel taxes at the same rate as under the existing plan.

Local tax cannot be taken by state

If approved, the Safe, Clean Water measure would be a special parcel tax approved for specific, local purposes only. This means that the State of California cannot redirect these funds to fulfill its own financial obligations as it has in the past.

Built-in sunset clause

With voter approval in November 2012, the Clean, Safe Creeks plan will be replaced with the Safe, Clean Water program. The replacement will occur on July 1, 2013, when the Safe, Clean Water program will take effect. The first revenue from



Financial highlights

(From previous page)

- **Includes exemptions for low-income senior citizens**
- **Built-in 15-year sunset clause with tax ending on June 30, 2028**
- **Funding from special tax cannot be taken by the state** *(Cont.)*

the Safe, Clean Water special tax will be received by the District in January 2014. Like the previous Clean, Safe Creeks plan, the new funding structure has a built-in sunset date—that is, the tax will automatically end after 15 years on June 30, 2028.

Consumer price index (CPI) adjustment

To account for the effects of inflation, the District Board of Directors may adjust the special tax amounts annually using the San Francisco-Oakland-San Jose Consumer Price Index for all Urban Consumers (CPI-U). Special tax amounts may be adjusted annually by the percentage increase in the year or years since February 30, 2013. However, in the event that the annual CPI-U increase is less than 3 percent, the annual increase for special tax rates may be set at 3 percent.

Recovery of flood or other natural disaster damage repair costs

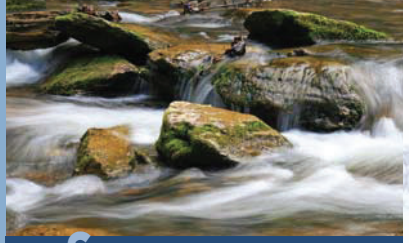
Unanticipated disasters can cause significant damage to flood protection facilities and result in significant repair costs. For the purposes of the 15-year program, unanticipated disasters are those that are declared disasters by the Governor of California or the President of the United States due to flooding or other natural disasters. Since these events do not occur frequently, the 15-year program does not include funding to repair facility damage caused by disasters. As a result, in the event of an unanticipated disaster the special tax rates shall be increased to meet the repair cost of District facilities damaged by flooding or other natural disasters, and the maximum tax rate shall be the percentage increase in CPI plus the 4.5 percent necessary to cover the repair cost of District facilities. A special tax rate increase such as this can only be collected for three years after an unanticipated disaster has occurred.

Exemption for low-income senior citizens

The District will continue to provide an exemption from the special tax for residential properties owned by one or more persons over 65 years of age who occupy that property as their principal residence. In order to qualify, the applicant must be low-income, own at least 50 percent of the property, and have attained age 65 before the end of the fiscal year in which the tax is due. The applicant must apply for the exemption each year. Low-income is defined as 75 percent of the state median total household income. The latest available data from March 2012 indicates that the state median total household income level was $54,198; "low income" would then be $40,649.



Under the Safe, Clean Water measure, low-income seniors would continue to receive an exemption from the special tax.



Financial highlights

(From previous page)

- **Four funding sources: Safe, Clean Water parcel tax, Clean Safe Creeks reserves, state reimbursements, and interest earnings.**
- **Safe, Clean Water measure covers $548 million of total $720 million cost**
- **Total funding of $720 million equals the total funding uses**
- **Uses a combination of debt and pay-as-you-go financing**

Funding sources

Four primary funding sources provide the resources to implement the projects under the Safe, Clean Water program. They are the special parcel tax, starting reserves from unspent funds of the Clean, Safe Creeks plan, state reimbursements, and interest earnings. Each source is discussed in greater detail below.

Over the 15-year period, total funding sources of $720 million are anticipated. As illustrated in ***Chart 5-1*** below, total funding comprises $548 million from special parcel tax collections, $113 million from beginning Clean, Safe Creeks reserves, $47 million from state reimbursements, and $12 million from interest income.

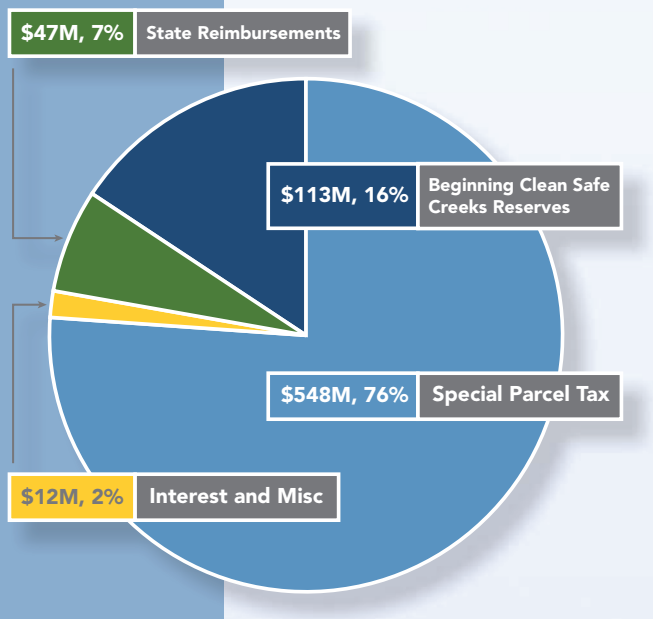
Special parcel tax revenue

The primary source of revenue for the Safe, Clean Water program is a special parcel tax. This is a local tax that can be used for any purpose approved by the voters, including capital projects, maintenance, and services that benefit the county as a whole—in other words, the entire Safe, Clean Water and Natural Flood Protection program. Continuing the current special tax allows the District to use the existing assessment formula to calculate tax amounts, and to use the existing database of property owners of record for collection. This results in a considerable cost savings by minimizing the administrative burden of initiating a new type of tax program.

The rate structure for calculating the proposed special tax is identical to the Clean, Safe Creeks structure that it replaces, and will be applied equitably and consistently throughout the county.

Chart 5-1 Safe, Clean Water Funding Sources
$720 Million 15-Year Estimated Total

In 2012 Dollars



*State reimbursements do not include $20M in subventions that are carried as a reduction to the Upper Llagas Creek capital project cost.

Rates are based on land use and the size of each land parcel, which is directly related to stormwater runoff. The land use categories, their estimated stormwater runoff factors, and the special tax calculation formula are described in detail in Appendix D. ***Table 5-2*** below shows how the first year's parcel tax revenue would be assessed in 2014 by land use category. The table is presented in 2012 dollars and the data is based on the Santa Clara County tax roll.

Table 5-2 Estimated Special Parcel Tax Revenue in 2014 by Land Use Category*

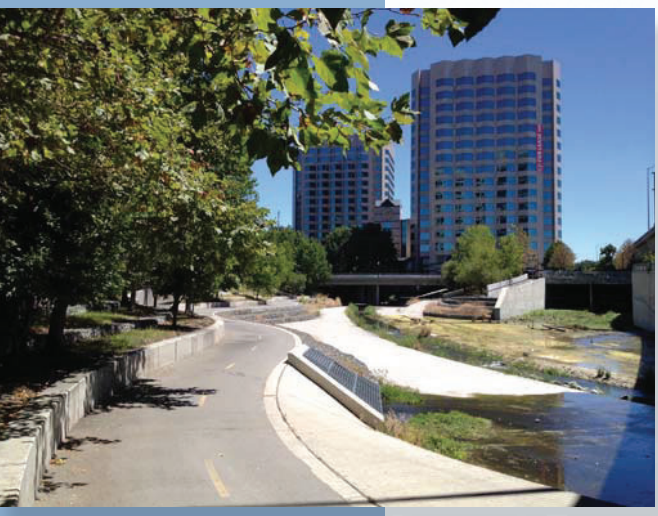
Land Use	Acres	Parcel Count	Parcel Tax Assessment Revenue (2012 Dollars)
Group A- Commercial and Industrial	31,531	19,756	$11,538,255
Group B- Condominiums, Townhomes, Institutions, Apartments, , Mobile Homes	13,118	87,371	$4,992,368
Group C- Residential (Single Family to 4 Units)	93,144	346,273	$18,316,456
Group D- Disturbed Urban, Vacant, Agriculture	62,533	10,031	$347,323
Group E- Undisturbed Agriculture, Marsh, Ponds – Urban	193,480	1,992	$70,920
Group E- Undisturbed, Grazing, Brush, Forest – Rural	191,048	1,777	$41,601
Group F- Well Site (Residential)	9	164	$0
Assessment Override**	7,769	107	$355,651
Exempt	169,529	17,185	$0
S.C. County Collection Fee	-	-	($356,626)
TOTAL	**762,161**	**484,656**	$35,305,948

*Land use categories are described in Resolution No. 12-62, provided in Appendix E.
**Assessment override values are corrections for parcels where actual land use differs from zoned land use.

Special parcel tax rates are based on land use and the size of each parcel, which is directly related to storm water runoff.

Beginning Clean, Safe Creeks reserves

The Clean, Safe Creeks plan used pay-as-you-go financing, which means that funds were accumulated until sufficient monies became available to begin construction work. This financing structure avoided finance charges, but incurred project cost inflation while construction was deferred. Because the Safe, Clean Water program replaces the Clean, Safe Creeks plan in July 2013—three years before Clean, Safe Creek's original sunset date—it also picks up those accumulated reserves.



As a voter-approved tax to support local projects, funding from the Safe, Clean Water measure could not be taken by the state to balance its own budget. Shown here is the District's multi-use Downtown Guadalupe River project which incorporates flood protection, native vegetation and recreational access, as well as a channel passage that allows fish to migrate through during low flows.

At the start of the Safe, Clean Water program, approximately $113 million is anticipated to be accumulated in reserves specifically to help satisfy Clean, Safe Creeks commitments. Most of this accumulated amount is from set-aside revenue designated for capital project construction, and some is from efficiencies that saved money which can now be used for other projects. These Clean, Safe Creeks reserve funds are intended to help construct and maintain the capital projects continued from the Clean, Safe Creeks plan, which are listed in the Appendix fold-out summary Chart G1, and described in section four, *Introducing the Safe, Clean Water Program*. A portion of the reserve funds will also be available to support new Safe, Clean Water projects during the initial years.

State reimbursements and other contributions

The State Flood Control Subventions Program, administered by the California Department of Water Resources, provides financial reimbursements to local agencies that construct federally authorized flood protection projects. Several capital projects in the Clean, Safe Creeks plan that will be continued into the Safe, Clean Water program are eligible and have already begun to receive subvention monies. As such, state subventions related to Clean, Safe Creeks projects are the secondary revenue source in the Safe, Clean Water program, with anticipated subventions estimated at $47 million. These constitute reimbursements for previous expenditures under the Clean, Safe Creeks plan for the Upper Guadalupe River ($28 million), Upper Berryessa Creek ($10 million), and Upper Llagas Creek ($9 million) projects. An additional $20 million subvention is carried as a reduction to expenditures for the Upper Llagas Creek project proposed for the Safe, Clean Water program.

Many Safe, Clean Water capital projects leverage local funding by partnering with the U.S. Army Corps of Engineers (Corps). The Corps provides in-kind work such as planning, design and construction, but does not provide direct monetary contributions in the same way as the state subventions program; therefore, federal participation is not counted as revenue. Section four, Priority E of this document describes the projects that are federally authorized.

Interest earnings

Interest earnings are accumulated on funds waiting to be used. The amount accumulated is primarily earned on money waiting to be spent in the pay-as-you-go capital program financing method described below.

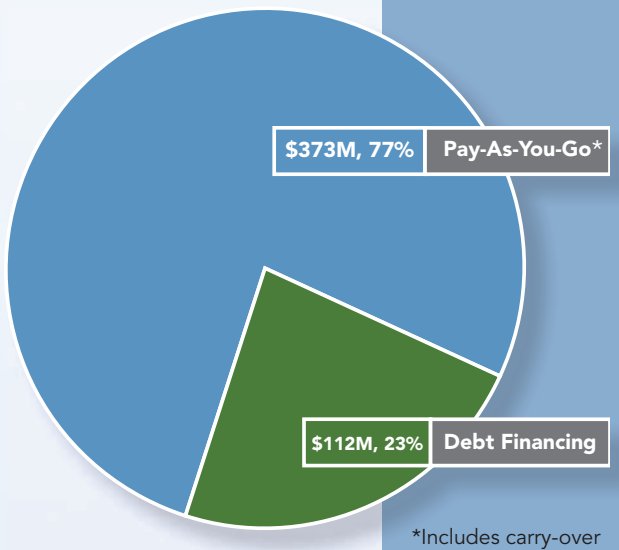
Pay-as-you-go and debt financing for capital projects

The Safe, Clean Water program will use a combination of debt financing and pay-as-you-go funding to pay for capital projects. Debt financing is a way for the District to borrow money up-front against the stream of revenue projected over the life of the program. Approximately 23 percent of capital project costs are anticipated to be funded through debt financing via the issuance of Certificates of Participation (COPs). Debt proceeds of $112 million are planned for 2015. Debt service totaling $133 million is comprised of repaying the principal borrowed ($112 million) and interest on the borrowed money ($21 million), which is the cost of financing. This financing plan, combined with the revenue stream and carry-forward of the Clean, Safe Creeks reserves, will fully fund all Clean, Safe Creeks projects so that their commitments are met. COP financing will also help fund Safe, Clean Water capital projects at the start of the program, rather than waiting for reserves to build up.

Pay-as-you-go financing means that funds must be accumulated until enough has been collected to commit to a construction project. As shown in ***Chart 5-2***, approximately $373 million (77 percent) of capital costs in the Safe, Clean Water program will be funded through pay-as-you-go financing. Consequently, some of the capital construction will not begin until later in the program. However, planning and design work will move forward on these projects so that when sufficient funds are available construction can begin.

Chart 5-2 Capital Program Funding Sources: Estimated Pay-As-You-Go and Debt Financing

In 2012 Dollars



*Includes carry-over reserves from the Clean, Safe Creeks plan.

Funding uses

The purpose of the Safe, Clean Water program is to deliver capital projects and vital services to the residents of Santa Clara County. The total cost of the new program's commitments is $720 million. These can be grouped into: completion of Clean, Safe Creeks obligations ($214 million), implementation of Safe, Clean Water priorities ($426 million), planning and delivery ($21 million), cost of debt financing ($21 million), and undesignated contingency funds intended to offset unanticipated expenditures ($38 million).

Since the Safe, Clean Water program would replace the Clean, Safe Creeks plan before its sunset date, the program would fund completion of Clean, Safe Creeks commitments along with Safe, Clean Water projects. Remaining Clean, Safe Creeks commitments total $214 million. Clean, Safe Creeks capital projects funded by Safe, Clean Water beyond the first three years are limited to two projects that require additional funds to complete due to federal funding shortfalls: the Upper Llagas Creek Flood Protection and Upper Guadalupe River Flood Protection projects. These and all Safe, Clean Water projects help fulfill the five priorities in the new program and are described at length in section four. The Safe, Clean Water five priorities and their anticipated expenditures are summarized below in ***Table 5-3.***

Table 5-3 Safe, Clean Water Estimated Costs By Priority

Priority	15-Year Estimated Cost in Millions (2012 Dollars)	Percent of Total
A – Ensure a safe reliable water supply	$15	4%
B – Reduce toxins, hazards and contaminants in our waterways	$54	13%
C – Protect our water supply from earthquakes and natural disasters	$48	11%
D – Restore wildlife habitat and provide open space	$108	25%
E – Provide flood protection to homes, businesses, schools, and highways*	$201	47%
TOTAL	$426	100%

*Priority E does not include $20 million of anticipated state subventions because this expected reimbursement has been deducted from the estimated Upper Llagas Creek project cost

Planning and delivery, debt financing interest expense, and undesignated contingency funds

Planning and delivery costs and debt financing interest expense are part of the costs to deliver the Safe, Clean Water program. Planning and delivery costs include capital project planning and delivery, special parcel tax revenue collection, and funding for at least two program audits. Debt financing interest expense is the net cost of financing projects by borrowing money, as described earlier. Interest rates are currently very favorable, which means that the District would be able to complete all Clean, Safe Creeks capital projects and some Safe, Clean Water capital projects in the first few years of the program, instead of waiting for construction funds to accumulate.

Undesignated contingency funds are monies set aside for unanticipated expenses. One lesson learned from the Clean, Safe Creeks plan was that contingency funding is needed to cover the possibility of unanticipated project changes and increased costs due to market fluctuations, etc. Undesignated contingency funds are approximately nine percent of Safe, Clean Water project costs, and are essential to provide flexibility in project management.

Summary of funding sources and uses

As shown in ***Table 5-4,*** the Safe, Clean Water program is balanced over the 15-year duration of the program. The total funding sources of $720 million are equal to the total funding uses. These funds would deliver the services and projects that the Santa Clara Valley Water District would commit to voters with passage of the November 2012 ballot measure to fund the Safe, Clean Water program.

Table 5-4 Total Estimated Safe, Clean Water Funding Sources and Uses

	15-Year Estimated Total in Millions (2012 Dollars)	Percent of Total
Funding sources		
Special parcel tax revenue	$548	76%
Beginning Clean, Safe Creeks reserves	$113	16%
State reimbursements*	$47	6%
Interest and miscellaneous	$12	2%
Total funding sources	**$720**	**100%**
Funding uses		
Safe, Clean Water program priorities		
A – Ensure a safe reliable water supply	$15	
B – Reduce toxins, hazards and contaminants in our waterways	$54	
C – Protect our water supply from earthquakes and natural disasters	$48	
D – Restore wildlife habitat and provide open space	$108	
E – Provide flood protection to homes, businesses, schools, and highways*	$201	
Subtotal program priorities A thru E	$426	59%
Planning and delivery	$21	3%
Debt financing**	$21	3%
Undesignated contingency	$38	5%
Completing Clean, Safe Creeks 2000 Plan	$214	30%
Total funding uses	**$720**	**100%**

*State reimbursements do not include $20 million in anticipated subventions that are carried as a reduction to the Priority E Upper Llagas Creek project cost.
**Cost of financing is the net of debt service of $133 million less debt proceeds of $112 million.

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Implementing the program



Safe, Clean Water and Natural Flood Protection

Implementation highlights

- **Three detailed five-year implementation plans allow for continual program refinement**
- **Independent Monitoring Committee of volunteers appointed by District Board to ensure transparency and accountability**
- **Key performance indicators to monitor progress and determine completion of all projects**

Upon approval of funding for the Safe, Clean Water and Natural Flood Protection program (Safe, Clean Water), the District would begin drafting the first of three implementation plans that would each apply to five years of the 15-year measure. The three separate plans were recommended by independent auditors of the current Clean, Safe Creeks and Natural Flood Protection plan (Clean, Safe Creeks), so that adjustments can be made to reflect the ongoing economic, policy and regulatory changes that occur during a long-term program. It is anticipated that the final draft of the first five-year implementation plan would be available to the public for comment by July 1, 2013, before the District Board of Directors approves and finalizes it.

The implementation plan would be carried out by District staff under the direction of the District's elected Board of Directors (Board). As with the 2000 Clean, Safe Creeks plan, the Board would appoint an Independent Monitoring Committee (IMC) to track the progress of the Safe, Clean Water program and ensure transparency and accountability. The roles of the Board and the IMC are briefly summarized at the end of this section and would be described more specifically in the first five-year implementation plan.

Implementation plans: a continual process of refinement

The strategy of having three consecutive five-year implementation plans would allow for continual refinement of all projects included in the Safe, Clean Water program. As each five-year plan proceeds, the IMC, Board and staff would share information to keep projects on-track, with adjustments made as needed to ensure that key performance indicators are achieved on time and within budget.

Three consecutive implementation plans

The first of the three Safe, Clean Water implementation plans would define the roles and responsibilities of the Board with respect to oversight, the IMC with respect to monitoring, and District staff with respect to implementation. The plan would include procedures and guidelines, specific definitions, annual measures and descriptions of processes to guide program implementation. For example, the plan would describe how to establish evaluation criteria for the grants and partnerships offered in the program, using a science-based decision-making process with stakeholder input.

Key performance indicators (KPIs) would be used to monitor progress and completion for all projects in the new program. The first five-year plan would describe how KPIs would be measured, and designate categories of completion for each project such as: schedule-based (completed according to a timeline), performance-based, (for example: construct three geomorphically designed projects), and/or fiscal-based (full allocation is expended to accomplish desired outcomes). KPIs for all projects in the new program are listed in Appendix fold-out Chart G-1 of this report, as well as in section four, *Introducing the Safe, Clean Water Program*.



Three separate five-year implementation plans would allow for continual refinement of all Safe, Clean Water projects to keep them on-track and current with continually changing regulatory and economic conditions. Shown here is the ribbon cutting for the Calabazas Creek Flood Protection project, which was completed under the voter-approved Clean, Safe Creeks plan.



Transitioning to the Safe, Clean Water program

- **Funding collected during Clean, Safe Creeks for capital projects will continue to meet those same commitments under the Safe, Clean Water measure**
- **Allocations from the first three years of Safe, Clean Water revenue will also help complete Clean, Safe Creeks capital projects, which otherwise would have received funding up until the January 2016 Clean, Safe Creeks sunset date.**
- **All other Clean, Safe Creeks projects will be continued under the new program with similar or expanded obligations**

The District would update each subsequent five-year plan to incorporate state and federal policy/regulatory changes, and economic fluctuations that influence the District's ability to implement projects, as well as new or evolving terms or technologies that need clarification. Subsequent implementation plans would also take into account periodic audits of the Safe, Clean Water program to provide a platform for continuous improvement. As the funding sunset of the Safe, Clean Water program approaches, the final five-year implementation plan would introduce closure options, which would be adjusted annually as necessary during the final years of the program.

Annual budgets, project milestones and annual reports

Appendix fold-out Chart G-2 shows the anticipated schedule for each of the projects in the Safe, Clean Water program. Projects would be included in the District's annual budget which the Board approves each year during a publicly noticed, open meeting where stakeholders can make comments and recommendations. The budget provides detailed information on all District projects including project descriptions, goals, milestones and anticipated completion dates so that all elements can be coordinated to ensure steady progress.

District staff would prepare an annual report on all projects in the Safe, Clean Water program to include: project status based on established performance measures, trends and progress toward completion of projects, and expenditures of funds. The yearly report would also discuss the status of anticipated federal and state funding, as well as any other challenges or opportunities that may affect the program. Staff would provide the report to the Board and IMC for review and strategic direction. The budget provides detailed information on all District projects including project descriptions, goals, milestones, and anticipated completion dates so that all elements can be coordinated to ensure steady progress.

Transitioning from the Clean, Safe Creeks plan to the Safe, Clean Water program

On the date that the voter-approved parcel tax goes into effect, the Safe, Clean Water program would replace the Clean, Safe Creeks measure in its entirety. Any tax payments collected for use by the District under Clean, Safe Creeks would be used to achieve similar or expanded projects under the Safe, Clean Water program. Funding collected for capital projects under the Clean, Safe Creeks measure would be used under the Safe, Clean Water program to meet previous commitments. All other projects identified in Clean, Safe Creeks would be replaced by comparable projects with similar or expanded obligations.

Funds needed to complete Clean, Safe Creeks projects would include carry-forward reserves from the Clean, Safe Creeks plan, allocations from the first three years of revenue under the Safe, Clean Water measure, and a portion of Safe, Clean Water debt proceeds. These allocations would help complete Clean, Safe Creeks capital projects which otherwise would have received funding up until the January 2016 Clean, Safe Creeks sunset date. The first of the three Safe, Clean Water five-year implementation plans would document all pending Clean, Safe Creeks obligations and how they would be met or carried into the Safe, Clean

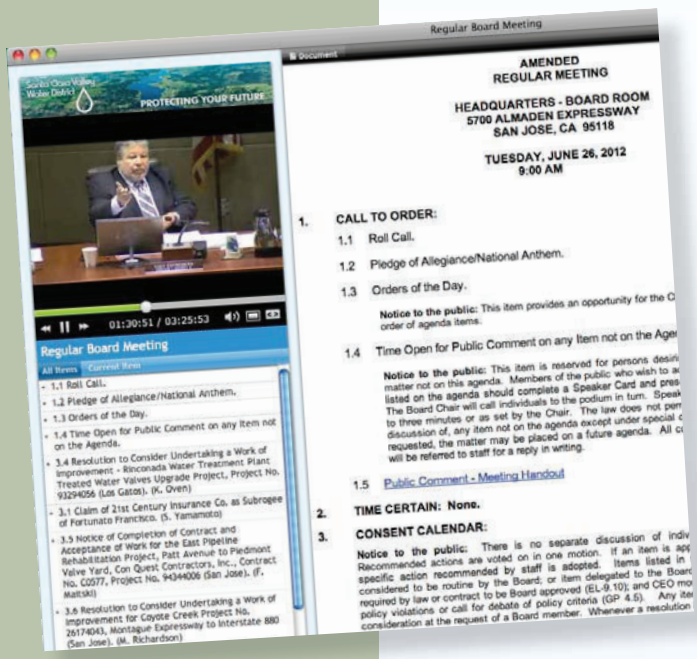
Water program. As shown in ***Table 6-1*** below, projects transition from the Clean, Safe Creeks plan to the Safe, Clean Water program in one of four ways:

1. **Carried-forward** projects meet the original key performance indicators described under the Clean, Safe Creeks plan, but have been updated with additional work using new revenue from the Safe, Clean Water program.

Table 6-1 Transitioning Clean, Safe Creeks Projects to the Safe, Clean Water Program

Clean, Safe Creeks Activity Number* and Project Name	Corresponding Safe, Clean Water Project	Notes Details of Safe, Clean Water projects are provided in section four of this report. Also see Appendix G for a full summary of all Safe, Clean Water projects
Carried forward - will meet original Clean, Safe Creeks KPIs, but additional Safe, Clean Water funding enables additional work		
1.1 San Francisquito Creek	E5	Clean, Safe Creeks included planning and design; Safe, Clean Water will fund construction
1.1 Upper Guadalupe River	E8	see Appendix G for KPI
1.1 Upper Llagas Creek	E6	see Appendix G for KPI
Completed - Clean, Safe Creeks KPI has been met		
1.1 Calabazas Creek	-	KPI: Flood damage reduction for 2,483 parcels
On track to be completed - Clean, Safe Creeks KPIs will be met within first five years of Safe, Clean Water program		
1.1 Permanente Creek	-	KPI: Flood damage reduction for 1,664 parcels
1.1 Sunnyvale East and West Channels	-	KPI: Flood damage reduction for 1,618 parcels (Sunnyvale East) and 11 parcels (Sunnyvale West)
1.1 Berryessa Creek	-	KPI: Flood damage reduction for 100 to 1,814 parcels (depending on federal funding)
1.1 Coyote Creek	-	KPI: Planning study, design and partial construction of an engineering plan to provide flood damage reduction
4.1 Provide additional trails and open space along creeks and in watersheds	D3	KPI: Community partnerships to identify and provide public access to 70 miles of open space or trails along creeks.
Closed and replaced - Safe, Clean Water program funds a project with similar or expanded KPIs		
1.2 Sediment removal for capacity	E1	New KPI – see Appendix G
1.3 Maintenance of newly-improved creeks	E1	New KPI – see Appendix G
2.1 Reduce urban runoff pollutants in south county cities	B2	New KPI – see Appendix G
2.2 Hazardous materials management and incident response	B5	Similar KPI – see Appendix G
2.3 Impaired water bodies improvement	B1	New KPI – see Appendix G
2.4 Neighborhood creeks frequently inspected and cleaned of litter and graffiti	B6	Similar KPI – see Appendix G
2.4 Illegal encampment cleanup	B4	New KPI – see Appendix G
2.5 Assist county or cities in reduction of pollutants in surface water	B2, B3	New KPI – see Appendix G
3.1 Vegetation management	D1, E1	New KPIs – see Appendix G
3.2 Community partnerships to identify and implement restoration of fisheries, riparian habitat or wetlands	D2, D3, D4, D6, D8	Clean, Safe Creeks KPI achieved. Similar or expanded KPIs under new projects – see Appendix G

*As designated in the Clean, Safe Creeks Independent Monitoring Report, available online at valleywater.org



All Board discussions and decisions on the Safe, Clean Water program will be carried out in publicly noticed meetings. As shown here, all Board meetings can be streamed live at valleywater.org, where you can also view previous, archived meetings.

There are two such projects—E6: Upper Llagas Creek Flood Protection, and E8: Upper Guadalupe River Flood Protection, which are described in section four, *Introducing the Safe, Clean Water Program.*

2. **Completed** means those projects completed prior to June 30, 2013.

3. **On track to be completed** means that project key performance indicators as described in the Clean, Safe Creeks plan would be met within the first five years of the new Safe, Clean Water program.

4. **Closed and replaced** are those projects that would be replaced in the Safe, Clean Water program with projects that have similar or expanded key performance indicators.

Federal and state partnerships

The Safe, Clean Water program leverages state and federal dollars to complete work that local funding alone cannot support. Capital projects for flood protection and infrastructure upgrades are expected to leverage over $400 million in state and federal funds to supplement local funding from the renewed tax. State and federal participation are critical for the full implementation of the following capital projects:

- E4: Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose
- E5: San Francisquito Creek Flood Protection, San Francisco Bay to Middlefield Road – Palo Alto
- E6: Upper Llagas Creek Flood Protection, Buena Vista Avenue to Wright Avenue – Morgan Hill
- E7: San Francisco Bay Shoreline Study – Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara and Sunnyvale
- E8: Upper Guadalupe River Flood Protection, Highway 280 to Blossom Hill Road – San Jose

With the exception of project E7, for which the District is a minor partner in a larger state/federal project, the program defines two 15-year KPIs for each of these projects: one for the preferred federally funded project, and another for the local-only option. Descriptions of both options are provided in section four of this report.

Each year, the District Board would review the status of anticipated federal and state funding and decide if the local-only option has become a more viable choice. Any changes made to the Safe, Clean Water program by the Board would take place in publicly noticed, open hearings. As state and federal partnerships continue to evolve, each five-year implementation plan would include updated strategic direction for these partnered projects that depend on outside funding.



Role of the District Board of Directors

The District Board would perform a detailed review of the performance, financial analyses and strategies of the Safe, Clean Water program every year using annual budget documents and annual reports prepared by District staff. The Board would also initiate at least two professional, independent audits during the 15-year program to ensure accountability.

The Board would approve implementation strategies at the outset of the program, and authorize any changes during the course of the program, including the shifting of funds if required to meet predetermined performance measures. The Board also would approve the specific selection criteria for each grant and partnership project, and set minimum cost-share requirements for grantees and partners.

The Board may also direct that proposed projects be modified or not implemented dependent on funding limitations, results of environmental reviews, and other factors. Should this occur, the Board would hold a formal, public hearing on the matter, which would be noticed by publication and by contacting interested parties. All Board discussions and decisions on the program would be carried out in publicly noticed meetings, which all are encouraged to attend.

Role of the Independent Monitoring Committee

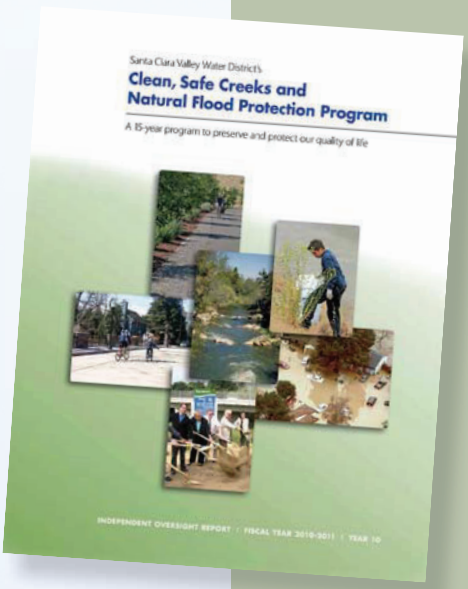
To ensure transparency and accountability, the District Board would appoint an Independent Monitoring Committee (IMC) of volunteers external to the District who would provide an independent voice in tracking progress during the duration of the Safe, Clean Water program.

The IMC would analyze annual reports prepared by District staff and conduct annual audits of the Safe, Clean Water program. The IMC would also produce its own annual report to track program implementation and results, and the Board may direct staff to make necessary adjustments based on IMC findings. At the fifth and tenth anniversaries of the program, the IMC may recommend modifications that might be necessary to meet performance goals. The District would budget for the IMC's administrative support and annual reports, and all IMC findings will be available for viewing by the public.

Safe, Clean Water and Natural Flood Protection

Transparency and accountability

- **Annual report on progress and expenditures produced by District staff**
- **Annual reports produced by Independent Monitoring Committee**
- **Two professional audits performed during 15-year program**
- **All reports available for public viewing, and all decisions and discussions on program carried out in publicly noticed meetings**



To ensure transparency and accountability, the Safe, Clean Water Independent Monitoring Committee would produce its own annual reports. Shown here is a recent IMC report for the Clean, Safe Creeks plan, available online for public review at valleywater.org.

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Appendix A

Frequently asked questions

1. What does the Safe, Clean Water program do?

The Santa Clara Valley Water District has developed a 15-year program to ensure that the most important water supply, flood protection and watershed stewardship needs of our area may be fulfilled. Based on input from more than 16,000 residents and stakeholders, the long-term priorities addressed in the plan are:

- Ensure a safe, reliable water supply for the future
- Reduce toxins, hazards and contaminants, such as mercury and pharmaceuticals, in our waterways
- Protect our water supply and local dams from the impacts of earthquakes and natural disasters
- Restore fish, bird and wildlife habitat; and provide open space access
- Provide flood protection to homes, businesses, schools, streets and highways

If passed by voters, the proposed Safe, Clean Water program would continue an existing tax measure to achieve these priorities.

2. Is local funding necessary to meet these goals? What if we don't renew this local water funding?

State and federal funding is diminishing and unreliable. Other District revenues are simply inadequate to ensure a safe, reliable water supply for the future, while also providing the other urgently needed projects and programs to meet the longterm water resource needs of our region.

Since 2000, voter-approved local funding has been critical to help meet our area's need for clean, safe creeks and waterways. This local funding, which can't be taken away by the state or federal government, is set to expire in 2016 if voters don't renew it.

If we do nothing, there will be major reductions and potential eliminations of existing programs and services. The most significant impacts will be in the area of impaired water bodies, water quality, flood protection and stream stewardship projects. For example, our ongoing effort to reduce hazardous toxins and pollutants in our waterways, or our HAZMAT emergency response capabilities, will be significantly curtailed. Similarly, 66,000 parcels will continue to remain in the flood zone.

In response to community priorities, the proposed Safe, Clean Water program would continue vital services from Clean, Safe Creeks, and add water supply and conservation projects. This will ensure a stable and reliable funding source for a portion of the water supply projects and programs. Water ratepayers would still contribute the majority of funding for water supply projects and needed capital improvements.

3. How can we be sure funds will be spent as promised?

This local funding, which can't be taken by the state or federal government, would only be spent in Santa Clara County to meet the specific purposes contained in the measure. It would:

- Require all expenditures to be published annually
- Include exemptions for low-income senior citizens
- Require external oversight by an independent monitoring committee
- Require at least two professional audits of the program during the 15-year period

Spending would be limited to specific projects included in the published program as part of the official ballot measure. If voters approve the proposed Safe, Clean Water program, the District Board of Directors would adopt an implementation resolution for the program. The implementing resolution would allow the Board, during public meetings, to appoint an Independent Monitoring Committee (IMC) composed of external community members and technical experts. The IMC would ensure that the funds are only spent as promised to voters.

4. How did you determine what projects or what portion of the total cost would be funded from this measure?

Extensive community engagement, including face-to-face, telephone and online interviews with 14,000 residents, told us clearly that the top priorities of the community are: providing a safe, reliable water supply for the future, reducing toxins and hazards from our waterways, making dams and pipelines safe from earthquakes and other disasters, restoring and protecting wildlife habitat, and ensuring flood protection.

With the priorities established, the District staff evaluated the needs identified in the District's capital improvement program and longterm master plan, as well as extensive stakeholder and community input. Staff ranked all potential projects using set criteria, including benefit/cost ratios, geographical distribution, availability of outside funding sources and the potential for other agencies to help meet some or all of the public goals.

5. How successful was the previous Clean, Safe Creeks plan?

In November 2000, the Santa Clara County voters passed a parcel tax to support Clean, Safe Creeks and Natural Flood Protection, a 15-year plan to preserve and protect the quality of life in Santa Clara Valley.
Accomplishments through June 30, 2012 include:

- Removed 4,200 pounds of mercury from local creeks, streams and the bay
- Prevented other pollutants, toxins and hazardous materials from affecting our local waterways

- Met 100 percent of rapid response requests for hazardous materials, litter and graffiti
- Maintained public/private partnerships with Santa Clara County's Green Business Program to help support green jobs and the Santa Clara Valley Urban Runoff Pollution Prevention Program
- Installed treatment systems to reduce methylmercury in Almaden Lake and the Calero, Almaden and Guadalupe reservoirs
- Removed 5,677 dump trucks worth of sediment from streams to maintain the water carrying capacity of flood channels and ensure healthy streamflow and habitat (This represents 10 percent of the total sediment removed to date under Clean Safe Creeks, which is the percentage supported by the plan)
- Completed the Calabazas Creek flood protection project ahead of schedule, protecting 2,483 parcels
- Added access to more than 66 miles of pedestrian-friendly (and wherever possible, bicycle-safe) public trails and open spaces, and are poised to attain the plan goal of 70 miles by 2016
- Restored more than 569 acres of tidal and creek side habitat—more than five times the original 100-acre goal
- Conducted annual major cleanup events at 685 locations to improve cleanliness and safety in and around local creeks and streams
- Managed 15,240 acres of vegetation, exceeding the target-to-date of 13,199 acres; the amount of vegetation as currently managed will exceed the 15-year, 22,000 acre Clean, Safe Creeks goal

Nearly all of the many high-priority projects named in the 2000 measure have been entirely or nearly completed. Several of the goals have already been exceeded, and more are on-track to be exceeded. In some cases, project timelines were extended because tough new clean water and environmental protection regulations required old plans to be updated. In other cases, we've extended project timelines to allow neighbors and community stakeholders to participate extensively in planning and design.

Finally, there are three flood protection projects that are heavily dependent on diminishing state or federal funding, which has delayed these vital projects and forced dramatic cutbacks. Funds that remain in the Clean, Safe Creeks program will be used to complete projects and programs that were promised in the measure voters approved in 2000. For details on the transition from Clean, Safe Creeks to the Safe, Clean Water program, please see section six, *Implementing the Program*. For more information on Clean, Safe Creeks performance, please see Appendix C.

6. What are the similarities and differences between the Safe, Clean Water program proposed for funding renewal, and the Clean, Safe Creeks plan that voters approved in 2000?

The biggest difference is that the current proposal includes projects to:

- Ensure a reliable, local water supply for the future
- Protect our water supply and dams from the impacts of earthquakes and natural disasters

Other elements of the plan are the same and these are:

- Ensure safe and clean creeks, streams and waterways by removing toxins, pollutants and hazardous materials
- Restore and protect wildlife habitat
- Ensure flood protection where needed

The current proposal also improves local control by reducing dependence on state and federal funding sources, and by allowing the District to issue bonds to ensure that urgently needed projects can be completed on time, without waiting for unreliable outside funding.

7. Would the funding renewal measure increase my tax rate?

No. Renewal of the voter-approved local funding would be a continuation of the current rate structure so tax rates would not increase. The local funding renewal measure would:

- Exempt low-income senior citizens
- Require all expenditures to be published annually
- Require external oversight by an independent monitoring committee
- Require at least two professional audits of the program during the 15-year period.

For more information on Safe, Clean Water finances, please see section five, *Financing the Program.*

Appendix B

Endorsements

Supporters of the Safe, Clean Water program

Organizations and local government

Acterra

Campbell Chamber of Commerce

City of Morgan Hill

City of Palo Alto

City of Saratoga

Cupertino Chamber of Commerce

Designing By The Yard

American Federation of State, County and Municipal Employees, Local 101

International Federation of Professional & Technical Engineers, Local 21

Gilroy Chamber of Commerce

Milpitas Chamber of Commerce

Morgan Hill Chamber of Commerce

Mountain View Chamber of Commerce

National Association for the Advancement of Colored People,
San Jose/Silicon Valley

Palo Alto Chamber of Commerce

International Federation of Technical and Professional Engineers, Local 21

Rose Garden Neighborhood Preservation Association

San Jose Silicon Valley Chamber of Commerce

Santa Clara Chamber of Commerce

Santa Clara County Coalition of Chambers of Commerce

Santa Clara Unified School District

Senterville Terrace Home Owners Association

Sunnyvale Chamber of Commerce

Sustainable Silicon Valley

Individuals

Rita Aguilar-Cayo
James Atchison
Jan Averre
Jill Ballard
Gail Bautista
Herman Bilenko
Alan Breakstone
Cathleen Brennan
Lois Brown
John Buffin
Judith Butts
Thomas Carlino
Farrell Caso
Diane Cast
Jacqueline Cathcart
Joanne Chayut
Hao-Fu Chen
Hon. Dean J. Chu, former mayor, City of Sunnyvale
Richard Ciapponi
George Clifford
Jessica Collins
Katherine Correia
Carroll Cox
David Craig
Vivian E. David
Eugene Davis
Adrian Dewhurst
Brian Durbin
Stefan Eberle
Paul Ellsworth
Clifford Flores
Marian Fricano
Marianne Gardner
Nick Garza
Jared Goor
Ulla Gran Knutsson
Bert Greenberg
Werne Haag
Charles Hammerstad
E. Carl Hanks Jr.
Eric Herrmann
Linda Hirao
David Huang
Barbara Hunt
Arun Inapakolla
Bob Ingold
Ankur Jain
Mohan Jayapal
Magesh Jayapandian
Hanson Jiang
Marilee Johnson
Bob Kanefsky
Erika Kavanagh
Kenneth Kelly
Manoj Keshavan
Wayne Krill
Susan Lamb
Jeff Laveroni
Juan Ledesma
Sampson Lee
Bob Ligocki
Nora Lira
Terry Long
Marie and Ken MacDonald
Douglas Manke
Roz Marcelino
Jim McCann
Rosa McCann
Suzanne Morrone
Drew Oman
Windy Orviss
Cathy Paramo
Susan Pines
Brad Piontkowski
Mark Robbins
Renee Rockwell
Kenneth Schirle
Maris Schwartz
Jennifer Sclafani
Ravi Sharma
Derek Sheeman
Mort Shein
Kenneth Shirey
Armando Silva
Cathrine Steinborn
Robert Stone
James Stott
Richard Tarver
Hon. Steve Tate, mayor, City of Morgan Hill
Bracey Tiede
Phung Tran
Daizo Uchida
Rachel Unger
Armando Valadez
David Valadez
Steven Verba
Elise Wessels
Anne Wilke
Clark Williams
Carol B. Willis
Sherdenia Wilson
Kenneth Wong
Joel Zizmor

Appendix C

Clean, Safe Creeks 2000 performance

In 2000 voters passed Measure B, the Clean, Safe Creeks and Natural Flood Protection plan (Clean, Safe Creeks) to fulfill the community's need for projects that provided flood protection, restored habitat, supported healthy creek and bay ecosystems, improved water quality, and provided open space and recreational opportunities.

As detailed in the most recent Independent Monitoring Committee (IMC) report, nearly all the projects in the 2000 Clean, Safe Creeks plan have reached expected timeline goals and are completed or near completion. The District has also exceeded several goals and we are on track to exceed more. The only exceptions are two capital projects that did not receive anticipated federal funding, as discussed below. What follows are summaries of all Clean Safe Creek projects by outcome. The latest IMC report can be downloaded at valleywater.org/Programs/IMCarchives.aspx.

Outcome One: **Homes, schools, businesses and transportation networks are protected from flooding**

Six of the nine flood protection projects in the plan are locally funded. The remaining three capital projects rely upon federal and state funding, which has been delayed in all three cases. The Upper Berryessa project is currently on-target to deliver the authorized federal project, but future federal funding remains uncertain. The Upper Guadalupe and Upper Llagas projects have not received adequate federal funding to date, so they have been re-scoped to deliver the "local-funding-only" alternative that was described in the Clean, Safe Creeks plan. Moving forward, all three of these projects will continue to be managed so that the full scope of the federally authorized project could be accomplished should that funding become available. The following is a recap of each project and, where needed, its proposed transition into the Safe, Clean Water and Natural Flood Protection program (Safe, Clean Water).

Locally funded flood protection projects

1. Permanente Creek, San Francisco Bay to El Camino Real

This project is on-target to exceed its goal of providing 1 percent flood protection to 1,664 parcels along Permanente Creek. The addition of upstream high-flow detention basins landscaped with native plants will protect 1,336 additional parcels, bringing the total number to 3,000. Construction is estimated at $30 million and will begin in Fiscal Year 2013, with completion by December 2016. No additional funding is needed for this project.

2. San Francisquito Creek, planning and design, San Francisco Bay to Searsville Dam

Clean, Safe Creeks funding covered the feasibility study and engineering design phase of this project and the District is on schedule to meet this commitment by December 2016. Subsequent to the Clean, Safe Creeks adoption in 2000, the U.S. Army Corp of Engineers (Corps) agreed to become a federal partner for construction, with the San Francisquito Creek Joint Powers Authority (JPA) acting as the local

sponsor. Once constructed, the project will protect 4,000 homes and businesses in two counties (more than 3,000 in Santa Clara County). The proposed Safe, Clean Water program will provide local funding to complete the project in partnership with the JPA and the Corps. Details on construction and funding can be found in sections four and five of this document, *Introducing the Safe, Clean Water Program*, and *Financing the Program*.

3. Sunnyvale West Channel, Guadalupe Slough to Highway 101
4. Sunnyvale East Channel, Guadalupe Slough to Interstate 280

These two adjacent creek projects were combined into one, and are on-target for project completion by 2016. Improvements in the west channel will protect 11 parcels. Upgrades in the east channel will protect 1,618 parcels in a residential area. Total cost for both projects is estimated at $70 million and will be covered with funding from Clean, Safe Creeks. No additional funding is needed.

5. Calabazas Creek, Miller Avenue to Wardell Road

The District has met its goal to protect 2,483 parcels, which completes flood protection in the Calabazas Creek watershed. The construction of the $2.1 million project was completed in December of 2011 with local funding.

6. Coyote Creek, Montague Expressway to Highway 280

The District is on-target to meet this project's goals, which includes preparing a planning study, designing a project, and implementing limited construction. The analysis identified the limits of an affordable project on the lower reaches of the study with completion by December 2016. No additional funding is proposed in the Safe Clean Water program.

Flood protection projects dependent upon outside funding

7. Upper Guadalupe River, Interstate 280 to Blossom Hill Road

Due to lack of federal funding, the District is pursuing an alternative "local-funding-only" project which is slightly different from that outlined in the Clean, Safe Creeks plan. The local-only option will complete four different reaches by 2016. This will reduce the frequency of flooding, but parcels in the flood plain will still be vulnerable to flooding from upstream sources until the full project can be completed. The four project reaches include:

- Interstate 280 to the Southern Pacific Railroad Bridge downstream of Willow Street
- The Southern Pacific Railroad Bridge downstream of Willow Street to the Union Pacific Railroad Bridge downstream of Padres Drive
- Northbound Almaden Expressway to Stream Gage 23B near Blue Jay Drive
- Branham Road to Blossom Hill Avenue

Besides working to maximize the benefits of local funding, the District also continues to aggressively pursue outside funding and maintain viable partnerships with the Corps so that the entire Upper Guadalupe River project can be completed by 2020.

The Safe, Clean Water and Natural Flood Protection program includes new local funding to move this project forward toward protecting 6,989 parcels. An outline of planned work and a funding proposal appear in sections four and five of this document.

8. Berryessa Creek, Lower Penitencia Creek to Old Piedmont Road

The District and the Corps are on-target to fulfill this project's outcomes; however, completion relies on the Corps receiving adequate appropriations from Congress in the next several years. Once design and construction are complete, and depending on continued federal appropriations, the project would provide flood damage reduction for about 1,700 homes and businesses by December 2016. The number of parcels protected was reduced from the originally planned 1,814 because the federal benefit-to-cost criterion was not met for the reach that lies upstream of Interstate 680. If only local funding is available, the project area will be reduced to three miles of channel modifications that would protect approximately 100 parcels between the confluence with Lower Penitencia and Montague Expressway.

9. Upper Llagas Creek, Buena Vista Avenue to Wright Avenue

Since 2000, the federal government has reduced its commitment to fund this project from 65 percent to 25 percent. This reduced commitment means additional local funding will be needed to make up the shortfall. The Safe, Clean Water plan proposes additional funding to complete the entire project and take advantage of any available federal participation. When completed (current estimate is 2019), the project would provide 1 percent flood protection to four miles of creeks throughout downtown Morgan Hill and beyond, including 820 homes, 200 businesses, 190 agricultural parcels and six schools/institutions. In the interim, the District will pursue the local-funding-only option as outlined in the Clean, Safe Creeks plan. This includes 3.25 miles of channel construction and a one-mile diversion channel, which would still leave areas of urban Morgan Hill exposed to flooding. The local-funding-only project will be completed by 2016. The revised project plan and funding strategy are proposed in sections four and five of this report.

Flood protection maintenance projects

Sediment removal for conveyance capacity

The IMC and District board is satisfied that the 58,988 cubic yards of sediment removed thus far under Clean, Safe Creeks is maintaining water carrying capacity of flood channels, and fulfilling this program element. The Clean, Safe Creeks plan funds 10 percent of the cost of sediment removal.

Funding for maintenance of future projects

This program goal to support maintenance activities for newly constructed channels continues to be met annually with a specified annual amount set aside. In Fiscal Year 2010-2011, $496,000 was set aside for future creek maintenance. At the end of fiscal 2011-2012 the total reserve fund for future creek maintenance will be $4.9 million. Funding for future maintenance is continued in the Safe, Clean Water program.

Outcome Two: **There is clean, safe water in our creeks and bays**

All commitments and key performance indicators for this outcome have been met and continue to be filled. Projects in the Safe, Clean Water program will continue the District's work to minimize water pollutants—see section four for details. So far the District has:

- Removed 4,200 pounds of mercury from local creeks, streams and the bay
- Prevented other pollutants, toxins and hazardous materials from affecting our local waterways
- Met 100 percent of rapid response requests, cleaning up hazardous materials, litter and graffiti
- Maintained public/private partnerships with Santa Clara County's Green Business Program to help support green jobs and the Santa Clara Valley Urban Runoff Pollution Prevention Program
- Installed treatment systems to reduce methylmercury in Calero, Almaden and Guadalupe reservoirs, and in Lake Almaden
- Conducted annual major cleanup events at 685 locations to improve cleanliness and safety in and around local creeks and streams

Outcome Three: **Creek and bay ecosystems are protected, enhanced or restored**

The District has exceeded annual goals, and is on track to exceed cumulative goals for this program. The District's grant program was instrumental to the success of Outcome Three, allowing partnerships with local agencies, nonprofits, and schools to encourage new ideas and bring them to fruition in a cost-effective manner. To build on this success, new grants and partnerships are proposed in the Safe, Clean Water program. As of June 30, 2012, Outcome Three has allowed the District to:

- Manage 15,240 acres of vegetation, exceeding the target-to-date of 13,199 acres. As currently managed, the program will exceed the fifteen-year goal of 22,000 acres.
- Restore more than 569 acres of tidal and creekside habitat—more than five times the original 100-acre goal.

Outcome Four: **There are additional open spaces, trails and parks along creeks and in the watersheds**

Through public and private partnerships, the District's open space program has provided access to over 66 miles of pedestrian-friendly (and wherever possible, bicycle-safe) trails and is poised to attain the program's goal of 70 miles of trails and open space by or before 2016. Projects in the Safe, Clean Water program include provisions to increase open space and trail access. Additional funding for trails is proposed in the Safe Clean Water program.

Appendix D

Special Tax Rate Structure

How the special tax is calculated

The rate structure for calculating the proposed special tax is identical to the Clean, Safe Creeks and Natural Flood Protection structure that it will replace. It is intended to be an equitable basis for the rate structure and is applied consistently throughout the county. Rates are based on the land use (which is directly related to an assigned storm water runoff factor or can be thought of as the estimated percent of hard-scape area on a parcel) and size of each land parcel. The six land use categories, their estimated stormwater runoff factors, and the special tax calculation formula are described in detail below. For 2014 parcel tax rates by land use category, please turn to Table 5-1 on page 5.2.

Land use categories and estimated stormwater runoff factors

The following six land use categories and estimated stormwater runoff factors will be used to determine the proposed special tax:

Category A: commercial and industrial parcels

1. Land used for industrial and commercial purposes. This land use is assigned an estimated stormwater runoff factor of 0.8.

2. The minimum tax for this category is applied to parcels of 1/4 acre or less.

Category B: high-density residential parcels, schools, churches, and institutions

1. Land used for apartment complexes, mobile home parks, condominiums, townhouses, or institutional purposes such as schools and churches. This land use is assigned an estimated stormwater runoff factor of 0.6.

2. With the exception of condominiums and townhouses, the minimum tax for this category is applied to parcels of 1/4 acre or less.

3. For condominiums and townhouses, an average lot size of 0.08 acre for each condominium or townhouse will be used to calculate the annual special tax rate.

Category C: single-family residences and multiple-family units up to 4 units

1. Land used for single-family residences and multiple-family units up to four units. This land use is assigned an estimated storm water runoff factor of 0.4.

2. The minimum tax for this category is applied to parcels of 1/4 acre or less. Incremental residential land in excess of 1/4 acre is assessed at the Category D rate.

Category D: agricultural parcels

1. Disturbed agricultural land, including irrigated land, orchards, dairies, field crops, golf courses, and similar uses. This land use is assigned an estimated stormwater runoff factor of 0.005.
2. The minimum tax for this category is applied to parcels of 10 acres or less.
3. The per acre rate for this category shall be used for any portion of land in Category C that is in excess of 1/4 acre of a parcel used for single-family residential purposes.

Category E: non-utilized agricultural parcels

1. Urban: Non-utilized agricultural lands, grazing land, salt ponds, undisturbed vacant lands, and parcels used exclusively as well sites for commercial purposes that are located in urban areas.
2. Rural: Non-utilized agricultural land, grazing land, undisturbed vacant land, and parcels used exclusively as well sites for commercial purposes that are located in rural areas.
3. This land use is assigned an estimated storm water runoff factor of 0.0015. The minimum tax for this category is applied to parcels of 10 acres or less. The minimum tax is the same for E-Urban and E-Rural categories. However, for the E-Rural category, incremental lands in excess of 10 acres will be assessed at 1/8 the E-Urban rate.

   The 1/8 factor was used because most rangelands in rural areas are either under the Williamson Act contracts, which limit their development potential, or they are located upstream of a District reservoir and impose less potential for flooding downstream. Additionally, the County Assessor's Office had advised that taxes on rangelands are on the average 1/8 of what they would be without Williamson Act provisions.

Category F: well parcels for residential uses

Parcels used exclusively as well sites for residential uses are exempt from the special tax.

Land use codes assigned to parcels by the County Assessor's Office will be grouped into the above six land use categories for determining the annual special tax for each parcel.

Special tax calculation formula

The special tax for each land use category will continue at the annually adjusted rate as established under the Clean, Safe Creeks and Natural Flood Protection measure, using the ratio of the runoff factor of each land use category to the runoff factor of Category C.

Example Calculation

If the minimum special tax (for parcels less than 1/4 acre) was set at $55.84/year for Category C, Single-Family Residences, the special tax (for a one-acre parcel) in Category A, Commercial and Industrial Parcels, can be calculated using the stormwater runoff factors for Category C, Residential, and Category A, Commercial/ Industrial, as follows:

$55.84 /year per 1/4 acre x (0.8 / 0.4) = $446.72 /year per acre

Appendix E

Election resolution and documents*

RESOLUTION NO. 12-62

PROVIDING FOR THE CONTINUATION AND LEVY OF A
SPECIAL TAX TO PAY THE COST OF A SAFE, CLEAN WATER
AND NATURAL FLOOD PROTECTION PROGRAM
IN THE COMBINED FLOOD CONTROL ZONE OF THE
SANTA CLARA VALLEY WATER DISTRICT SUBJECT,
NEVERTHELESS, TO SPECIFIED LIMITS AND CONDITIONS

WHEREAS, Santa Clara Valley Water District (District) policy is to ensure current and future water supplies and provide healthy, clean and reliable water in Santa Clara County; and

WHEREAS, District policy is to ensure reliable, clean water supplies for Santa Clara County and to protect Santa Clara County creeks, reservoirs, Monterey Bay, and San Francisco Bay from contaminants; and

WHEREAS, District policy is to provide for flood water and storm water flood protection to residents, businesses, visitors, public highways, and the watercourses flowing within the District; and

WHEREAS, District policy is to protect our water supply, pipelines and local dams from earthquakes and natural disasters; and

WHEREAS, the District maintains a flood protection system of levees, channels, drains, debris basins and other improvements upon which the lives and property of District residents depend, which said improvements must be kept in a safe and effective condition; and

WHEREAS, the District policy is to protect, enhance and restore healthy Santa Clara County creeks, watersheds and baylands ecosystems; and

WHEREAS, the need for protection of Santa Clara County water supplies, creeks, watersheds and baylands has increased since the voters passed the Clean, Safe Creeks and Natural Flood Protection Plan in 2000; and

WHEREAS, the District policy is to engage in partnerships with the community to provide open spaces, trails and parks along Santa Clara County creeks and watersheds; and

WHEREAS, the California State Legislature has authorized the District to levy a special tax on each parcel of property within the District or any zone or zones thereof upon receiving the approving vote of a two-thirds majority of the electorate of the District or zones therein; and

WHEREAS, the purpose of the special tax is to supplement other available but limited revenues to keep said improvements in a safe and effective condition; to enable the District to respond to emergencies; to perform maintenance and repair; to acquire, restore and preserve habitat; to provide recreation; to conduct environmental education; to protect and improve water quality; and, to construct and operate flood protection and storm drainage facilities; including in each case the cost of financing such activities; and

* The election resolution and associated documents are included as a reproduction of the actual election documents and are not an exact copy.

WHEREAS, State California Environmental Quality Act (CEQA) Guidelines section 15378(b)(4), states that government funding mechanisms are not projects subject to the requirements of CEQA.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Santa Clara Valley Water District as follows:

FIRST: The Board hereby finds that since (a) the management of creeks, watersheds and baylands to ensure safe, clean water and to protect, enhance and restore healthy ecosystems; and the construction and management of flood protection services, are made necessary by stormwater runoff, and (b) the lands from which runoff derives are benefitted by provision of means of disposition which alleviates or ends the damage to other lands affected thereby, by direct protection of loss of property, and other indirect means which include improved aesthetics and quality of life, the basis on which to levy the special tax is at fixed and uniform rates per area and county or city designated land use of each parcel, taxed as such parcel is shown on the latest tax rolls.

SECOND: Pursuant to the authority of Section 3 of the District Act, a Combined Zone consisting of the aggregate metes and bounds descriptions of Zones One, Two, Three, Four and Five is presently existing.

THIRD: A special District Election will be called within said District, on the proposition of levy of a special tax.

FOURTH: Subject to approval by two-thirds of the electors of the District voting at such election and pursuant to the authority vested in the Board, there is hereby established a special tax as authorized by this resolution, the proceeds of which shall be used solely for the purpose of supporting the priorities of the Safe, Clean Water and Natural Flood Protection program. The priorities are summarized in Table 1. The Safe, Clean Water and Natural Flood Protection Program Report (hereafter "Report") generally describes the priorities. This tax shall be instituted with the following provisions:

A. The Chief Executive Officer (CEO) or designee of the District is directed to cause a written Report to be prepared for each fiscal year for which a special tax is to be levied and to file and record the same, all as required by governing law. Said Report shall include the proposed special tax rates for the upcoming fiscal year at any rate up to the maximum rate approved by the voters. A special fund shall be established into which proceeds from the tax shall be deposited. Proceeds from the tax may used only for the Safe, Clean Water and Natural Flood Protection Program.

B. The CEO, or designee of the District may cause the special tax to be corrected in the same manner as assessor's or assessee's errors may be corrected but based only upon any or all of the following:

   1. Changes or corrections in ownership of a parcel;

   2. Changes or corrections of address of an owner of a parcel;

   3. Subdivision of an existing parcel;

4. Changes or corrections in the use of all or part of a parcel;

5. Changes or corrections in the computation of the area of a parcel;

6. As to railroad, gas, water, telephone, cable television, electric utility right of way, electric line right of way or other utility right of way properties.

Changes and corrections are not valid unless and until approved by the Board.

C. The Clerk of the Board shall immediately file certified copies of the final determination of special taxes and confirming resolution with the Auditor-Controller of the County of Santa Clara and shall immediately record with the County Recorder of said County a certified copy of the resolution confirming the special tax.

D. The special tax for each parcel set forth in the final determination by the Board shall appear as a separate item on the tax bill and shall be levied and collected at the same time and in the same manner as the general tax levy for county purposes. Upon recording of the resolution confirming the special tax such special tax shall be a lien upon the real property affected thereby.

E. Failure to meet the time limits set forth in this resolution for whatever reason shall not invalidate any special tax levied hereunder.

F. No special tax for the Safe, Clean Water and Natural Flood Protection Program shall be imposed upon a federal or state or local governmental agency. With said exception, a Safe, Clean Water and Natural Flood Protection Program special tax is levied on each parcel of real property in the five Flood Control Zones of the District subject to this resolution for the purposes stated in the Report and in this Resolution. Except for the minimum special tax as hereinafter indicated, the special tax for each parcel of real property in each such zone is computed by determining its area (in acres or fractions thereof) and land use category (as hereinafter defined) and then multiplying the area by the special tax rate applicable to land in such land use category. A minimum special tax may be levied on each parcel of real property having a land area up to 0.25 acre for Groups A, B, and C, up to 10 acres for Groups D and E Urban and, for Group E Rural, the minimum special tax shall be that as calculated for the E Urban category.

G. Land use categories for each parcel of land in the District are defined and established as follows:

Group A: Land used for commercial or industrial purposes.

Group B: Land used for institutional purposes such as churches and schools or multiple dwellings in excess of four units, including apartment complexes, mobile home parks, recreational vehicle parks, condominiums, and townhouses.

Group C: (1) Land used for single family residences and multiple family units up to four units. (2) The first 0.25 acre of a parcel of land used for single family residential purposes.

Group D: (1) Disturbed agricultural land, including irrigated land, orchards, dairies, field crops, golf courses and similar uses. (2) The portion of the land, if any, in excess of 0.25 acre of a parcel used for single family residential purposes.

Group E: Vacant undisturbed land (1) in urban areas and (2) in rural areas including dry farmed land, grazing and pasture land, forest and brush land, salt ponds and small parcels used exclusively as well sites for commercial purposes.

Group F: Parcels used exclusively as well sites for residential uses are exempt from the special tax.

H. The special tax amounts applicable to parcels in the various land uses shall be as prescribed by the Board of Directors in each fiscal year (July 1 through June 30) beginning with fiscal year 2013-2014 all as stated above, in the Report and as required by law; provided, that the annual basic special tax unit (single family residential parcel) shall not exceed a maximum limit of $56, as adjusted by the compounded percentage increases of the San Francisco-Oakland-San Jose Consumer Price Index (CPI-U) for all Urban Consumers (or an equivalent index published by a government agency) in the year or years since April 30, 2013; provided, however that appropriate amounts may be increased in any year by up to the larger of the percentage increase of the San Francisco-Oakland-San Jose Consumer Price Index for all Urban Consumers in the preceding year or three percent (3%); and provided, further, however that in any period, not exceeding three years, immediately following a year in which the Governor of the State of California or the President of the United States has declared an area of said zones to be a disaster area by reason of flooding or other natural disaster, then to the extent of the cost of repair of District facilities damaged by such flooding or other natural disaster, the maximum tax rate shall be the percentage increase in CPI-U plus 4.5 percent and provided, that special taxes for the Safe, Clean Water and Natural Flood Protection Program shall be levied for a total of 15 years and, therefore, shall not be levied beyond June 30, 2028.

I. Pursuant to the State California Environmental Quality Act (CEQA) Guidelines section 15378(b)(4), adoption of this resolution for continuation of the parcel tax and as a government funding mechanism, is not a project subject to the requirements of CEQA. Prior to commencement of any project included in the Safe, Clean Water and Natural Flood Protection Program, any necessary environmental review required by CEQA shall be completed.

J. The Board of Directors may direct that proposed projects in the Safe, Clean Water and Natural Flood Protection Program be modified or not implemented depending upon a number of factors, including federal and state funding limitations and the analysis and results of CEQA environmental review. The Board of Directors must hold a formal, public hearing on the matter, which will be noticed by publication and notification to interested parties, before adoption of any such decision to modify or not implement a project.

K. In the event that the county or city designated land use for a parcel is different than the actual land use, the CEO of the District may, pursuant to written policies and procedures, cause the special tax to be adjusted based upon any or all of the following:

1. The parcel owner shall provide the District a claim letter stating that the present actual land use is different than the county or city designated land use, including an estimate of the portion of the parcel that is different than the designated land use. Such claim is subject to investigation by the District as to the accuracy of the claim. Parcel owner shall furnish information deemed necessary by the District to confirm the actual uses and areas in question which may include, but not be limited to, a survey by a licensed surveyor.

2. The parcel owner shall request the District to inspect the parcel and reevaluate the parcel tax.

3. The parcel owner shall notify the District after a substantial change in the actual land use occurs, including a new estimate of the portion of the parcel that is different than the designated land use.

4. The District may inspect and verify the actual land use for these parcels on a regular basis and will notify the appropriate parcel owners when it is determined that the actual land use has matched a county or city designated land use. The District shall then correct the special tax rates for these parcels accordingly.

L. Pursuant to state law, the District may provide an exemption from the special tax for low income owner-occupied residential properties for taxpayer-owners who are 65 years of age or older, the following shall apply:

Residential parcels where the total annual household income does not exceed 75 percent of the latest available figure for state median income at the time the annual tax is set, and such parcel is owned and occupied by at least one person who is aged 65 years or older is qualified to apply for an exemption from the applicable special tax.

M. An external, independent monitoring committee shall be appointed by the District Board of Directors to conduct an annual audit and provide an annual Report to the Board of Directors regarding implementation of the intended results of the Safe, Clean Water and Natural Flood Protection Program; at the fifth and tenth anniversaries of the Safe, Clean Water and Natural Flood Protection Program, the committee will identify to the District Board of Directors such modifications as may be reasonably necessary to meet the priorities of the Safe, Clean Water and Natural Flood Protection Program.

N. During the Safe, Clean Water and Natural Flood Protection Program period, the Board of Directors shall conduct at least two professional audits of the Program to provide for accountability and transparency.

O. Upon entering into effect, the Safe, Clean Water and Natural Flood Protection Program parcel tax authorized by this resolution and placed on the ballot by RESOLUTION NO. 12-63 will repeal and replace the Clean, Safe Creeks and Natural Flood Protection Plan parcel tax approved by the voters in 2000. On the date that the parcel tax authorized by this resolution and RESOLUTION NO. 12-63 goes into effect, the Safe, Clean Water and Natural Flood Protection Program will replace in its entirety the Clean, Safe Creeks and Natural Flood Protection Plan; any tax payments already made by voters and collected for use by the Water District for the Clean, Safe Creeks and Natural Flood Protection Plan will be used to achieve priorities identified in the Safe, Clean Water and Natural Flood Protection Program. Funding for capital projects currently identified in the Clean, Safe Creeks and Natural Flood Protection Plan, will continue under the Safe, Clean Water and Natural Flood Protection Program to meet previous commitments. All other projects and programs identified in the Clean, Safe Creeks and Natural Flood Protection Plan will be replaced by comparable projects or programs with similar or expanded obligations under the Safe, Clean Water and Natural Flood Protection Program.

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the following vote on July 24, 2012:

AYES: Directors T. Estremera, P. Kwok, D. Gage, J. Judge, R. Santos, B. Schmidt, L. LeZotte

NOES: Directors None

ABSENT: Directors None

ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By: _____
LINDA J. LEZOTTE
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC

_____
Clerk/Board of Directors

TABLE - 1 RESOLUTION NO. 2012 - 62

Providing for the continuation and levy of a special tax to pay the cost of a Safe, Clean Water and Natural Flood Protection Program in the combined flood control zone of the Santa Clara Valley Water District subject, nevertheless, to specified limits and conditions

Summary of Key Performance Indicators for the 15-Year Program

Project	Key Performance Indicator
Priority A: Ensure a Safe, Reliable Water Supply	
A1 Main and Madrone Avenue Pipelines Restoration	1. Restore transmission pipelines to full operating capacity of 37 cubic feet per second from Anderson Reservoir. 2. Restore ability to deliver 20 cubic feet per second to Madrone Channel.
A2 Safe, Reliable Water Grants and Partnerships	1. Award up to $1 million to test new conservation activities. 2. Increase number of schools in Santa Clara County in compliance with SB 1413 and the Healthy Hunger-Free Kids Act, regarding access to drinking water by awarding 100% of eligible grant requests for the installation of hydration stations; a maximum of 250 grants up to $254k. 3. Reduce number of private well water users exposed to nitrate above drinking water standards by awarding 100% of eligible rebate requests for the installation of nitrate removal systems; a maximum of 1000 rebates up to $702k.
A3 Pipeline Reliability Project	1. Install 4 new line valves on treated water distribution pipelines.

Project	Key Performance Indicator
Priority B: Reduce Toxins, Hazards, and Contaminants in our Waterways	
B1 Impaired Water Bodies Improvement	1. Operate and maintain existing treatment systems in 4 reservoirs to remediate regulated contaminants, including mercury. 2. Prepare plan for the prioritization of pollution prevention and reduction activities. 3. Implement priority pollution prevention and reduction activities identified in the plan in 10 creeks.
B2 Inter-Agency Urban Runoff Program (includes Santa Clara Valley Urban Runoff Pollution Prevention and South County programs)	1. Install at least 2 and operate 4 trash capture devices at stormwater outfalls in Santa Clara County. 2. Maintain partnerships with cities and County to address surface water quality improvements. 3. Support 5 pollution prevention activities to improve surface water quality in Santa Clara County either independently or collaboratively with south county organizations.
B3 Pollution Prevention Partnerships and Grants	1. Provide 7 grant cycles and 5 partnerships that follow pre-established competitive criteria related to preventing or removing pollution.
B4 Good Neighbor Program: Illegal Encampment Cleanup	1. Perform 52 annual clean-ups for the duration of the Safe, Clean Water program to reduce the amount of trash and pollutants entering the streams.
B5 Hazardous Materials Management and Response	1. Respond to 100% of hazardous materials reports requiring urgent on-site inspection in two hours or less.
B6 Good Neighbor Program: Remove graffiti and litter	1. Conduct 60 clean-up events (4 per year). 2. Respond to requests on litter or graffiti cleanup within 5 working days.
B7 Support Volunteer Cleanup Efforts and Education	1. Provide 7 grant cycles and 3 partnerships that follow pre-established competitive criteria related to cleanups, education and outreach, and stewardship activities. 2. Fund District support of annual National River Clean Up day, California Coastal Clean Up Day, the Great American Pick Up, and fund the Adopt-A-Creek Program.

Project	Key Performance Indicator
Priority C: Protect Our Water Supply and Dams From Earthquakes and Other Natural Disasters	
C1 Anderson Dam Seismic Retrofit	1. Provide portion of funds, up to $45 million, to help restore full operating reservoir capacity of 90, 373 acre-feet.
C2 Emergency Response Upgrades	1. Map, install, and maintain gauging stations and computer software on seven flood-prone reaches to generate and disseminate flood warnings.

Project	Key Performance Indicator
Priority D: Restore Wildlife Habitat and Provide Open Space Access	
D1 Management of Revegetation Projects	1. Maintain a minimum of 300 acres of revegetation projects annually to meet regulatory requirements and conditions.
D2 Revitalize Riparian, Upland and Wetland Habitat	1. Revitalize at least 21 acres, guided by the 5 Stream Corridor Priority Plans, through native plant revegetation and removal of invasive exotic species. 2. Provide funding for revitalization of at least 7 of 21 acres through community partnerships. 3. Develop at least 2 plant palettes for use on revegetation projects to support birds and other wildlife.
D3 Partnerships and Grants to Restore Wildlife Habitat and Provide Access to Trails	1. Develop 5 Stream Corridor Priority Plans to prioritize stream restoration activities. 2. Provide 7 grant cycles and additional partnerships for $21 million that follow pre-established criteria related to the creation or restoration of wetlands, riparian habitat and favorable stream conditions for fisheries and wildlife, and providing new public access to trails.
D4 Fish Habitat and Passage Improvements	1. Complete planning and design for two creek/lake separations. 2. Construct one creek/lake separation project in partnership with local agencies. 3. Use $6 million for fish passage improvements. 4. Conduct study of all major steelhead streams in the County to identify priority locations for installation of large woody debris and gravel as appropriate. 5. Install large woody debris and/or gravel at a minimum of 5 sites (1 per each of 5 major watersheds).
D5 Ecological Data Collection and Analysis	1. Establish new or track existing ecological levels of service for streams in 5 watersheds. 2. Re-assess streams in 5 watersheds to determine if ecological levels of service are maintained or improved.
D6 Creek Restoration and Stabilization	1. Construct 3 geomorphic designed projects to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.
D7 Partnerships for the Conservation of Habitat Lands	1. Provide up to $8 million for the acquisition of property for the conservation of habitat lands.
D8 South Bay Salt Ponds Restoration Partnership	1. Establish agreement with the US Fish and Wildlife Service to reuse sediment at locations to improve the success of Salt Pond restoration activities. 2. Construct site improvements up to $4 million to allow for transportation and placement of future sediment.

Project	Key Performance Indicator
Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets and Highways	
E1.1 Vegetation Control for Capacity	1. Maintain 90% of improved channels at design capacity.
E1.2 Sediment Removal for Capacity	
E1.3 Maintenance of Newly Improved Creeks	
E1.4 Vegetation Management for Access	1. Provide vegetation management for 6,120 acres along levee & maintenance roads.
E2.1 Coordination with Local Municipalities on Flood Communication	1. Coordinate with agencies to incorporate District-endorsed flood emergency procedures into their Emergency Operations Center plans.
E2.2 Flood-Fighting Action Plans	1. Complete 5 flood-fighting action plans (one per major watershed).
E3 Flood Risk Reduction Studies	1. Complete engineering studies on 7 creek reaches to address 1% flood risk. 2. Update floodplain maps on a minimum of 2 creek reaches in accordance with new FEMA standards.
E4 Upper Penitencia Creek	1. With federal and local funding, construct a flood protection project to provide 1 percent flood protection to 5,000 homes, businesses and public buildings. 2. With local funding only, acquire all necessary right-of-ways and construct a 1 percent flood protection project from Coyote Creek confluence to King Road.
E5 San Francisquito Creek	1. With federal and local funding, protect more than 3,000 parcels by providing 1 percent flood protection. 2. With local funding only, protect approximately 3,000 parcels from flooding (100-year protection downstream of HWY 101, 50-year protection upstream of HWY 101).
E6 Upper Llagas Creek	1. With federal and local funding, provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat. 2. With local funding only, provide 100-year flood protection for Reach 7 only (up to W. Dunne Avenue in Morgan Hill). A limited number of homes and businesses will be protected.
E7 San Francisco Bay Shoreline Study	1. Provide portion of the local share of funding for planning and design phases for the former salt production ponds and Santa Clara County shoreline area. 2. Provide portion of the local share of funding toward estimated cost of initial project phase (Economic Impact Area 11).
E8 Upper Guadalupe River	1. With federal and local funding, construct a flood protection project to provide 1 percent flood protection to 6,280 homes, 320 businesses and 10 schools and institutions. 2. With local funding only, construct flood protection improvements along 4,100 feet of Guadalupe River between SPRR crossing, downstream of Willow Street, to UPRR crossing, downstream of Padres Drive. Flood damage will be reduced; however, protection from the 1-percent flood is not provided until completion of the entire Upper Guadalupe River Project.

AMENDED
RESOLUTION NO. 12-63

CALLING A SPECIAL ELECTION TO BE HELD
IN THE
SANTA CLARA VALLEY WATER DISTRICT ON NOVEMBER 6, 2012
REQUESTING SERVICES OF REGISTRAR OF VOTERS,
REQUESTING CONSOLIDATION OF ELECTIONS, AND SPECIFYING
CERTAIN PROCEDURES FOR THE CONSOLIDATION ELECTION

WHEREAS, Santa Clara Valley Water District (District) RESOLVED, by the Board of Directors of Santa Clara Valley Water District (District), as follows:

FIRST: A special election is hereby called within said District, which election is to be consolidated with the general election to be held on November 6, 2012, to submit to the qualified electors of the District the following question:

Safe, Clean Water Program

To:
- Ensure safe, reliable water supply;
- Reduce toxins, hazards and contaminants in waterways;
- Protect water supply and dams from earthquakes and natural disasters;
- Restore wildlife habitat and provide open space;
- Provide flood protection to homes, schools and businesses;
- Provide safe, clean water in creeks and bays,

Shall Santa Clara Valley Water District renew an existing, expiring parcel tax without increasing rates, and issue bonds, described in Resolution 12-62, with independent citizen oversight and annual audits?

SECOND: The Registrar of Voters is requested to give notice of said election in accordance with law and to perform all other acts which are required for the holding and conducting of said election.

THIRD: The Board of Supervisors of the County of Santa Clara is hereby requested to order the consolidation of the special District election with the other elections to be held on November 6, 2012, and to provide the election precincts, polling places, and voting booths which shall in every case be the same, and that there shall be only one set of election officers in each of said precincts; and to further provide that the question set forth above shall be set forth in each form of ballot to be used at said election. Said Board of Supervisors is further requested to order the Registrar of Voters (a) to set forth on all sample ballots relating to said consolidation elections, to be mailed to the qualified electors of the District, the question set forth above and (b) to provide absentee voter ballots for said consolidation election for use by qualified electors of said District who are entitled thereto, in the manner provided by law.

FOURTH: The Registrar of Voters is hereby authorized and requested to canvass, or cause to be canvassed, as provided by law, the returns of said special district election with respect to the total votes cast for and against said question and to certify such canvass of the votes cast to the Board of Directors of Santa Clara Valley Water District.

FIFTH: The Clerk of this Board is hereby authorized and directed to certify to the due adoption of this resolution and to transmit a copy hereof so certified with the Registrar of Voters of the County.

SIXTH: Resolution No. 12-62 and attached Table 1 will comprise the full text of this ballot measure.

SEVENTH: The District recognizes that the County will incur additional costs because of the consolidation of the election on this measure with the November 6, 2012 election and agrees to reimburse the County for those relevant, additional costs. The Chief Executive Officer is hereby authorized and directed to expend the necessary funds to pay for the District's cost of placing the measure on the election ballot.

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the following vote on August 8, 2012:

AYES: Directors T. Estremera, P. Kwok, D. Gage, J. Judge, R. Santos, B. Schmidt, L. LeZotte

NOES: Directors None

ABSENT: Directors None

ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By: _____
LINDA J. LEZOTTE
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC

_____
Clerk/Board of Directors

Appendix F

Glossary

1 percent flood A flood that has a 1 percent chance of occurring in any given year; also referred to as a 100-year flood.

50-year flood A flood that has a 2 percent chance of occurring in any given year.

100-year flood A flood that has a chance of occurring an average of once every 100 years; also referred to as a 1 percent flood.

Acre-feet (AF) An acre-foot of water would cover one acre of land to a depth of one foot. One acre-foot equals approximately 325,000 gallons, the average amount of water used by two families of five in one year.

Aquifer An underground geologic formation of rock, soil, or sediment that is saturated with water; an aquifer stores groundwater.

Bypass channel A channel built to carry excess water from a stream, or to divert water from the main channel.

Ecosystem An ecological community of plants, animals, and microorganisms in their environment, functioning together as a unit.

Environmental enhancement Action taken by the District that benefits the environment is not mitigation, and is undertaken voluntarily. Enhancement actions may include environmental preservation or creation. In instances where enhancements are located in the same vicinity as a mitigation project, actions must exceed required compliance activities to be considered environmental enhancements.

Erosion The process by which soil is removed from one place by forces such as water or construction activity, and eventually deposited at a new place as sediment.

Fisheries An area with an associated fish or aquatic population.

Fish passage A generic term for several methods incorporated into flood protection projects which allow native fish species to travel upstream to spawn.

Flood A temporary inundation of inland or tidal waters onto normally dry land areas.

Flood conveyance capacity The maximum amount of water that can flow through a channel, stream, or culvert before there is flooding of surrounding properties.

Floodplain The low, flat, periodically flooded lands adjacent to creeks and rivers.

Floodplain management A city or county program of corrective, preventative and regulatory measures to reduce flood damage and encourage the natural and beneficial functions of floodplains. Careful local management of development in the floodplains results in construction practices that can reduce flood damages.

Floodwall Walls used as levees to contain floodwaters within a stream. Floodwalls are used when right-of-way is limited.

Geomorphology/geomorphic The study of the natural relationship between a stream and its bank and bed; pertaining to those processes that affect the form or shape of the surface of the earth, including creeks and streams.

Groundwater Water that is found beneath the surface in small pores and cracks in the rock and substrate.

Habitat The specific, physical location or area in which a particular type of plant or animal lives. To be complete, an organism's habitat must provide all of the basic requirements of life for that organism.

Hydraulics The properties and behaviors of fluids, such as water.

Hydrology The behavior (properties, distribution, and circulation) of water in the atmosphere, on land, and in the soil.

Impaired water bodies Waters that are too polluted or otherwise degraded to meet the water quality standards set by the State of California. Under the federal Clean Water Act, California is required to develop lists of impaired water bodies, including creeks, streams, and lakes.

Invasive plants A non-native plant species that has spread into native or minimally managed plant communities (habitats).

Large woody debris (LWD) The logs, sticks, branches, and other wood that falls into streams and rivers. This debris can influence the flow and shape of the stream channel. LWD plays an important biological role in streams by increasing channel complexity, enhancing fish habitat, and creating diversity in the food web.

Levee An embankment constructed to provide flood protection from seasonal high water.

Methylation The complex process by which inorganic mercury in surface water is converted to toxic methylmercury, the only form of mercury that accumulates appreciably in fish.

Methylmercury An organic, highly toxic form of mercury that easily bioaccumulates in organisms, increasing in concentration as it travels up the food chain. Because of mercury contamination the public is advised against consuming fish caught in some Santa Clara County reservoirs and ponds.

Mitigation Action taken to fulfill CEQA, NEPA or permit requirements and court-mandated mitigation to avoid, minimize, rectify or reduce adverse environmental impact(s) or compensate for the impacts by replacing or providing substitute resources or environments.

Modified floodplain A flood protection technique where land adjacent to a creek is lowered, allowing floodwaters to spread out over a wider area while containing the flow, and reducing the risk of damaging floods. A modified floodplain is often planted with native riparian species.

Natural flood protection A multiple-objective approach to providing environmental quality, community benefit and protection from creek flooding in a cost-effective manner through integrated planning and management that considers the physical, hydrologic and ecologic functions and processes of streams within the community setting.

Pay-as-you-go A funding mechanism which collects revenue until sufficient funds are available to begin construction of a project, in contrast to debt financing, in which a large sum is borrowed so that construction can begin sooner.

Permitting requirements A mechanism used to enforce state and federal laws that protect environmentally sensitive areas. Before moving forward on projects, the District is required to obtain permits from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, NOAA Fisheries, Regional Water Quality Control Board, and the California Department of Fish and Game. Each permit gives the permitting agency an opportunity to attach specific measures to the project to reduce impact on the environment.

Plant pallet A master list of appropriate plants that can be drawn from to create a specific assemblage of plants well-matched to a particular area or project's physical, hydrological and ecological conditions.

Preservation Action taken to protect an ecosystem or habitat area by removing a threat to that ecosystem or habitat, including regulatory actions and the purchase of land and easements.

Reach (creek) A portion of a creek or watercourse usually defined by both an upstream and a downstream unit.

Recharge The addition of new water to an aquifer or to the zone of saturation. See groundwater.

Restoration/restore Action taken by the District, to the extent practicable, toward the re-establishment as closely as possible of an ecosystem's pre-disturbance structure, function, and value, where it has been degraded, damaged, or otherwise destroyed

Revegetate To re-establish vegetation in areas which have been disturbed by project construction.

Revitalize Improve habitat value, particularly in an effort to connect contiguous creek reaches of higher value, by removing invasive, non-native vegetation and diseased and/or non-thriving specimens, applying mulch to suppress weed competition, revegetating sites with native plants, and installing predation prevention measures such as browse protection or cautionary fencing to reduce impacts from animals and vandals.

Riparian Pertaining to the banks and adjacent terrestrial habitat of streams, creeks, or other freshwater bodies and watercourses.

Riparian corridor The riverside or riverine environment next to a stream channel.

Riparian ecosystem A natural association of soil, plants and animals existing within the floodplain of a stream, and dependent for their survival on high water tables and river flow.

Sediment/sedimentation Mineral or organic material that is deposited by moving water and settles at the bottom of a waterway. Sediment in a lake, reservoir or stream can either be suspended in the water column or deposited on the bottom. Sediment usually consists of eroded material from the watershed, precipitated minerals, and the remains of aquatic organisms.

Special status species Any species which is listed, or proposed for listing, as threatened or endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service under the provisions of the Endangered Species Act; any species designated by the U.S. Fish and Wildlife Service as a "listed," "candidate," "sensitive," or "species of concern," and any species which is listed by the State of California in a category implying potential danger of extinction.

Special tax Any tax imposed for specific purposes, or any tax imposed by a special purpose district or agency, such as the Santa Clara Valley Water District. A special district contemplating a special tax levy must hold a noticed public hearing and adopt an ordinance or resolution prior to placing the tax on the ballot. The ordinance or resolution must specify the purpose of the tax, the rate at which it will be imposed, the method of collection, and the date of the election to approve the tax levy. Approval by a two-thirds vote of the city, county or district electorate is necessary for adoption.

Stewardship To entrust the careful and responsible management of the environment and natural resources to one's care for the benefit of the greater community.

Stream Corridor Priority Plan A document which identifies priorities for stream restoration and which can be a source of information to guide restoration actions by all parties.

Threatened species A species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Total Maximum Daily Loads (TMDLs) The maximum pollutant load a waterbody can receive (loading capacity) without violating water quality standards.

Urban runoff The water that runs over the impervious areas in cities, collecting pollutants as it flows. Runoff is recognized as a major source of water impairment.

Watershed Land area from which water drains into a major body of water.

Watershed stewardship Protecting and enhancing the county's creeks, streams and water bodies in order to preserve a vibrant, healthy ecosystem, and provide recreational opportunities when appropriate.

WebEx A system for holding meetings over the web which allows anyone with an internet connection to participate in real time with two-way communication.

Wetland Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation adapted for life in saturated soil conditions, as well as the diverse wildlife species that depend on this habitat.

Appendix G

Chart G-1 Safe, Clean Water Projects Summary

	Project	Project Description	Key Performance Indicator (KPI)	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water	Estimated Percent Funding from Safe, Clean Water
Priority A: Ensure a safe, reliable water supply						
A1	**Main and Madrone Avenue Pipelines Restoration**	Restore the Main and Madrone Pipelines to full operating capacity to provide the means to utilize another reliable water source (Anderson Reservoir) to supply water to the Main Avenue Ponds and Madrone Channel, allow for greater flows to the Main Avenue Ponds and the Madrone Channel, and maximize imported water flows to the treatment plants. Would reduce energy use at the Coyote Pumping Plant.	1. Restore transmission pipelines to full operating capacity of 37 cubic feet per second from Anderson Reservoir. 2. Restore ability to deliver 20 cubic feet per second to Madrone Channel.	$5.4 million	$5.4 million	100%
A2	**Safe, Reliable Water Grants and Partnerships**	Conduct comprehensive water supply grant program, including: 1. Water conservation grants 2. Drinking water for schools grants 3. Rebates to private well owners for treatments systems to remove excess nitrate from drinking water	1. Award up to $1 million to test new conservation activities. 2. Increase number of schools in Santa Clara County in compliance with SB 1413 and the Healthy Hunger-Free Kids Act, regarding access to drinking water by awarding 100% of eligible grant requests for the installation of hydration stations; a maximum of 250 grants up to $254,000. 3. Reduce number of private well water users exposed to nitrate above drinking water standards by awarding 100% of eligible rebate requests for the installation of nitrate removal systems; a maximum of 1,000 rebates up to $702,000.	$2.2 million	$2.2 million	100%
A3	**Pipeline Reliability Project**	This project constructs four line valves on treated water distribution pipelines. The line valves will allow the District to isolate sections of pipelines for scheduled maintenance or for repairs following a catastrophic event such as a major earthquake. The line valves will allow the District to maintain deliveries to customers upstream of pipeline segments that are damaged or down for maintenance.	1. Install 4 new line valves on treated water distribution pipelines.	$7.3 million	$7.3 million	100%
Priority B: Reduce toxins, hazards and contaminants in our waterways						
B1	**Impaired Water Bodies Improvement**	Reduce and remove sources of regulated contaminants, including mercury, for compliance with Regional Water Quality Control Board standards.	1. Operate and maintain existing treatment systems in 4 reservoirs to remediate regulated contaminants, including mercury. 2. Prepare plan for the prioritization of pollution prevention and reduction activities. 3. Implement priority pollution prevention and reduction activities identified in the plan in 10 creeks.	$21 million	$21 million	100%
B2	**Inter-Agency Urban Runoff Program (includes Santa Clara Valley Urban Runoff Pollution Prevention and South County programs)**	Maintain District compliance with the regulatory requirements for stormwater related issues.	1. Install at least 2 and operate 4 trash capture devices at stormwater outfalls in Santa Clara County. 2. Maintain partnerships with cities and County to address surface water quality improvements. 3. Support 5 pollution prevention activities to improve surface water quality in Santa Clara County either independently or collaboratively with south county organizations.	$34.4 million	$11.4 million	33%
B3	**Pollution Prevention Partnerships and Grants**	Conduct grants and partnerships to reduce contaminants, such as pharmaceuticals, in surface or groundwater.	1. Provide 7 grant cycles and 5 partnerships that follow pre-established competitive criteria related to preventing or removing pollution.	$7.3 million	$7.3 million	100%
B4	**Good Neighbor Program: Illegal Encampment Cleanup**	Reduce amount of trash and other pollutants entering the stream and reduce damage to District facilities from illegal encampments.	1. Perform 52 annual cleanups for the duration of the Safe, Clean Water program to reduce the amount of trash and pollutants entering the streams.	$4.1 million	$4.1 million	100%
B5	**Hazardous Materials Management and Response**	Protect streams, groundwater and reservoirs from hazardous material releases.	1. Respond to 100 percent of hazardous materials reports requiring urgent on-site inspection in two hours or less.	$3.3 million	$0.5 million	15%
B6	**Good Neighbor Program: Remove graffiti and litter**	Maintains the aesthetic condition of District watershed assets by removing trash from creeks, repairing/installing fencing, and removing graffiti on District facilities.	1. Conduct 60 cleanup events (4 per year). 2. Respond to requests on litter or graffiti cleanup within 5 working days.	$13.0 million	$7.8 million	60%
B7	**Support Volunteer Cleanup Efforts and Education**	Support volunteer efforts through grants and partnerships for cleanup, education, outreach and watershed stewardship activities by others to: 1) prevent contaminants from entering surface or groundwater; 2) engage people in volunteer activities (clean-up, education, watershed stewardship); and 3) reach people with specific stewardship messages.	1. Provide 7 grant cycles and 3 partnerships that follow pre-established competitive criteria related to cleanups, education and outreach, and stewardship activities. 2. Fund District support of annual National River Cleanup day, California Coastal Cleanup Day, the Great American Pick Up, and fund the Adopt-A-Creek Program.	$2.2 million	$2.2 million	100%

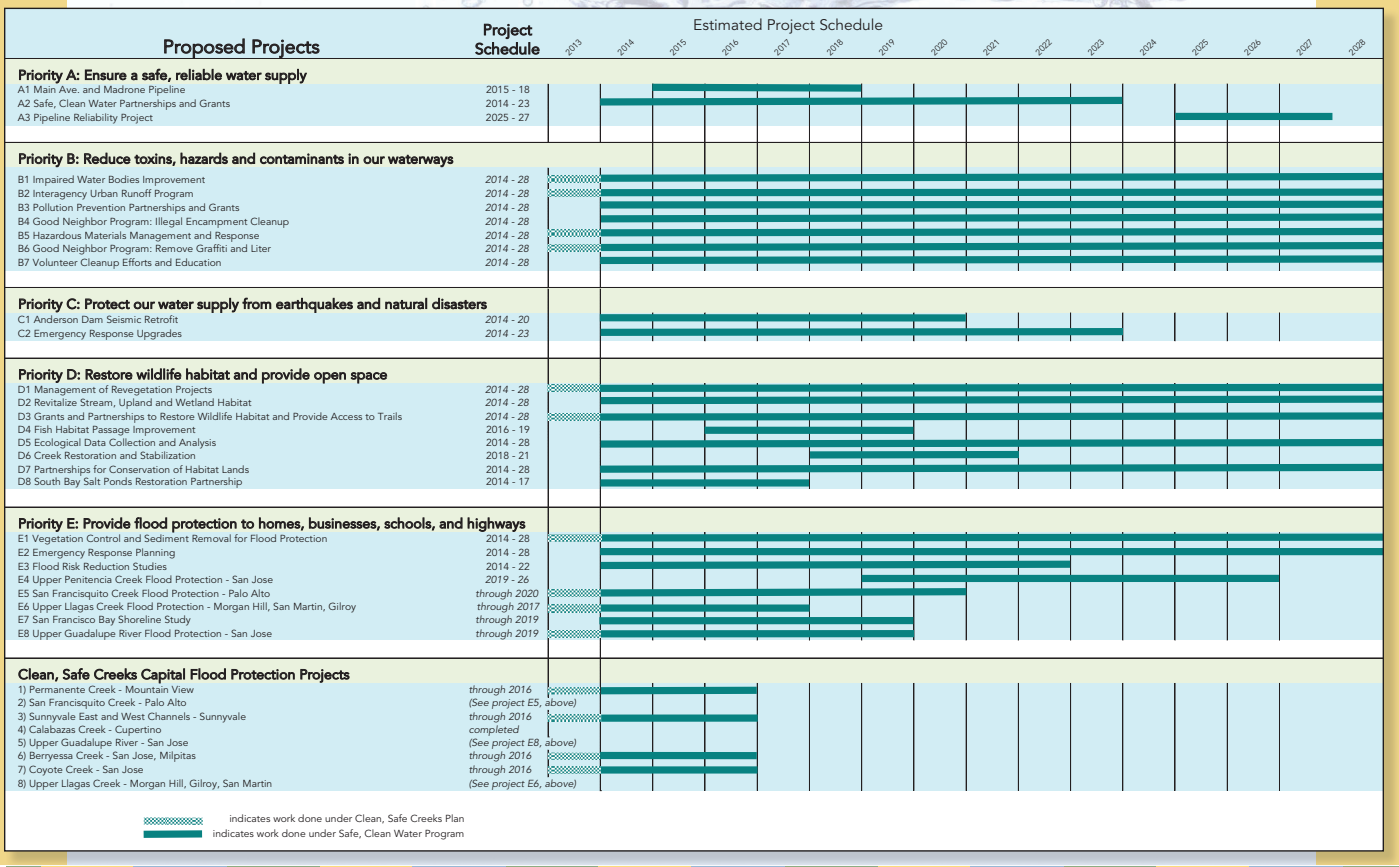
Chart G-1 **Safe, Clean Water Projects Summary**

	Project	Project Description	Key Performance Indicator (KPI)	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water	Estimated Percent Funding from Safe, Clean Water
Priority C: Protect our water supply from earthquakes and natural disasters						
C1	**Anderson Dam Seismic Retrofit**	Conduct seismic retrofit of Anderson Dam to: 1) resolve seismic stability deficiencies to ensure public safety, 2) restore lost reservoir storage capacity resulting from seismic concerns; and 3) work with state and federal regulating agencies to bring dam up to compliance in a timely manner.	1. Provide portion of funds, up to $45 million, to help restore full operating reservoir capacity of 90, 373 acre-feet.	$110.0 million	$45.0 million	41%
C2	**Emergency Response Upgrades**	Develop an automated flood warning system that will employ real-time rainfall data to predict stream flows, potential flood risk, and timing. Information would include delineating approximate areas subject to flooding. The information is disseminated to emergency responders, and to public via web, texting, auto-calls, etc., to alert proper entities for potential flooding event. Goal also includes a flood mapping component (with Coyote Creek recommended as first priority).	1. Map, install, and maintain gauging stations and computer software on seven flood-prone reaches to generate and disseminate flood warnings.	$2.7 million	$2.7 million	100%
Priority D: Restore wildlife habitat and provide open space						
D1	**Management of Revegetation Projects**	Carry out management and maintenance of revegetation projects to ensure that specific regulatory requirements and conditions are met at each mitigation revegetation site.	1. Maintain a minimum of 300 acres of revegetation projects annually to meet regulatory requirements and conditions.	$29.5 million	$17.1 million	58%
D2	**Revitalize Riparian, Upland and Wetland Habitat**	Revitalize the functionality of riparian and tidal habitat by removing invasive plants (including Arundo and Spartina) and revegetating where needed.	1. Revitalize at least 21 acres, guided by the 5 Stream Corridor Priority Plans, through native plant revegetation and removal of invasive exotic species. 2. Provide funding for revitalization of at least 7 of 21 acres through community partnerships. 3. Develop at least 2 plant palettes for use on revegetation projects to support birds and other wildlife.	$23.9 million	$14.2 million	59%
D3	**Partnerships and Grants to Restore Wildlife Habitat and Provide Access to Trails**	Provide environmental work to protect and restore habitats and encourage the return of endangered species. Create or restore additional wetlands, riparian habitat and favorable stream conditions for fisheries and wildlife. Provide access to trails. Includes funding for developing a priority list of stream restoration projects.	1. Develop 5 Stream Corridor Priority Plans to prioritize stream restoration activities. 2. Provide 7 grant cycles and additional partnerships for $21 million that follow pre-established criteria related to the creation or restoration of wetlands, riparian habitat and favorable stream conditions for fisheries and wildlife, and providing new public access to trails.	$23.5 million	$23.5 million	100%
D4	**Fish Habitat and Passage Improvements**	Create favorable stream conditions to restore and maintain fisheries, including steelhead, by carrying out projects such as separating Ogier Ponds from nearby Coyote Creek and planning/design for restoration activities at Alamitos Creek near Lake Almaden. The project will also conduct studies of Steelhead streams in Santa Clara County with consideration for improvement of fish habitat, including use of large woody debris and gravel augmentation.	1. Complete planning and design for two creek/lake separations. 2. Construct one creek/lake separation project in partnership with local agencies. 3. Use $6 million for fish passage improvements. 4. Conduct study of all major steelhead streams in the County to identify priority locations for installation of large woody debris and gravel as appropriate. 5. Install large woody debris and/or gravel at a minimum of 5 sites (1 per each of 5 major watersheds).	$24.5 million	$21.0 million	86%
D5	**Ecological Data Collection and Analysis**	Provide cost-effective, scientifically-based, and integrated information on stream ecosystem condition to help make informed asset management decisions.	1. Establish new or track existing ecological levels of service for streams in 5 watersheds. 2. Re-assess streams in 5 watersheds to determine if ecological levels of service are maintained or improved.	$10.5 million	$7.0 million	67%
D6	**Creek Restoration and Stabilization**	Increase the stability of stream channels through improvement projects that are based on sound geomorphic science principles; including projects such as Calabazas Creek (Comer debris basin), Stevens Creek, and Uvas Creek.	1. Construct 3 geomorphic designed projects to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.	$12.8 million	$12.8 million	100%
D7	**Partnerships for the Conservation of Habitat Lands**	Provide funds for the acquisition of property for the conservation of habitat lands.	1. Provide up to $8 million for the acquisition of property for the conservation of habitat lands.	$24 .0million	$8.0 million	33%
D8	**South Bay Salt Ponds Restoration Partnership**	Develop a long-term program in partnership with U.S. Fish and Wildlife Service to reuse clean sediment at environmentally appropriate locations to improve the success of the salt ponds restoration activities.	1. Establish agreement with the US Fish and Wildlife Service to reuse sediment at locations to improve the success of Salt Pond restoration activities. 2. Construct site improvements up to $4 million to allow for transportation and placement of future sediment.	$4.2 million	$4.2 million	100%

Chart G-1 Safe, Clean Water Projects Summary

	Project	Project Description	Key Performance Indicator (KPI)	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water	Estimated Percent Funding from Safe, Clean Water
Priority E: Provide flood protection to homes, businesses, schools, and highways						
E1	**(E1.1) Vegetation Control for Capacity**	Maintain design conveyance capacity by managing vegetation at appropriate intervals. Maintain compliance with regulatory documents such as Operations and Maintenance manuals for modified streams throughout the county.	1. Maintain 90 percent of improved channels at design capacity. 2. Provide vegetation management for 6,120 acres along levee & maintenance roads.	$111.1 million	$35.6 million	32%
	(E1.2) Sediment Removal for Capacity	Maintain design conveyance capacity by removing sediment deposition at appropriate intervals.				
	(E1.3) Maintenance of Newly Improved Creeks	Maintain capacity of SCW flood protection projects (see Priority E Projects) upon completion of construction through vegetation management and sediment removal.				
	(E1.4) Vegetation Management for Access	Provide vegetation management (weed abatement, overhanging growth, etc.) for fire safety and for site access.				
E2	**(E2.1) Coordination with Local Municipalities on Flood Communication**	Work with municipalities to clearly identify roles and responsibilities for floodplain management and emergency management.	1. Coordinate with agencies to incorporate District-endorsed flood emergency procedures into their Emergency Operations Center plans. 2. Complete 5 flood-fighting action plans (one per major watershed).	$3.1 million	$3.1 million	100%
	(E2.2) Flood-Fighting Action Plans	Develop written, site-specific flood-fighting plans for creeks with less than one percent level of protection.				
E3	**Flood Risk Reduction Studies**	Develop engineering studies including hydrology, hydraulics, geotechnical and remapping work of the floodplain area. If appropriate, updated maps would be submitted to FEMA to more accurately reflect the floodplain. This project would include Alamitos Creek, Calera Creek, tributaries to Lower Silver/Thompson Creeks, and Coyote Creek at Rockspring.	1. Complete engineering studies on 7 creek reaches to address 1 percent flood risk. 2. Update floodplain maps on a minimum of 2 creek reaches in accordance with new FEMA standards.	$7.9 million	$7.9 million	100%
E4	**Upper Penitencia Creek**	This project partners with the U.S. Army Corps of Engineers to plan, design, and construct improvements along 4.2 miles of Upper Penitencia Creek from the confluence with Coyote Creek to Dorel Drive.	1. With federal and local funding, construct a flood protection project to provide 1 percent flood protection to 5,000 homes, businesses and public buildings. 2. With local funding only, acquire all necessary right-of-ways and construct a 1 percent flood protection project from Coyote Creek confluence to King Road.	$139.5 million	$41.9 million	30%
E5	**San Francisquito Creek**	Provide 100-year flood protection from San Francisco Bay to Highway 101, and 50-year protection upstream of Highway 101 to Middlefield Road with support and funding by regional partners. This project is sponsored by the San Francisquito Creek Joint Powers Authority, of which the District is a member agency, in partnership with the U.S. Army Corps of Engineers.	1. With federal and local funding, protect more than 3,000 parcels by providing 1 percent flood protection. 2. With local funding only, protect approximately 3,000 parcels from flooding (100-year protection downstream of HWY 101, 50-year protection upstream of HWY 101).	$128.0 million	$35.5 million	28%
E6	**Upper Llagas Creek**	This project continues a Clean, Safe Creeks 2000 project in partnership with the U.S. Army Corps of Engineers to plan, design, and construct improvements along 12.5 miles of channel extending from Buena Vista Ave. to Wright Ave., including West Little Llagas Creek.	1. With federal and local funding, provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat. 2. With local funding only, provide 100-year flood protection for Reach 7 only (up to W. Dunne Avenue in Morgan Hill). A limited number of homes and businesses will be protected.	$105.0 million	$39.0 million	37%
E7	**San Francisco Bay Shoreline Study**	The District is partnering with the California State Coastal Conservancy, the U.S. Army Corps of Engineers, and working with stakeholders to complete planning and design, and ultimately construction of improvements to the San Francisco Bay Shoreline. Initial construction is planned for Economic Impact Area 11 (EIA 11). Without federal participation, additional planning, design and construction cannot be implemented by the District due to limited available funding sources.	1. Provide portion of the local share of funding for planning and design phases for the former salt production ponds and Santa Clara County shoreline area. 2. Provide portion of the local share of funding toward estimated cost of initial project phase (Economic Impact Area 11).	$223.0 million	$20.0 million	9%
E8	**Upper Guadalupe River**	This project partners with the U.S. Army Corps of Engineers to plan, design, and construct improvements along 5.5 miles of Guadalupe River extending from I-280 to Blossom Hill Road.	1. With federal and local funding, construct a flood protection project to provide 1 percent flood protection to 6,280 homes, 320 businesses and 10 schools and institutions. 2. With local funding only, construct flood protection improvements along 4,100 feet of Guadalupe River between SPRR crossing, downstream of Willow Street, to UPRR crossing, downstream of Padres Drive. Flood damage will be reduced; however, protection from the 1 percent flood is not provided until completion of the entire Upper Guadalupe River Project.	$320.6 million	$18.3 million	6%

Chart G-2 **Estimated Schedule for Safe, Clean Water Projects**

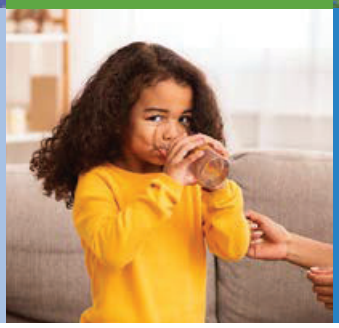


Countywide Map of Safe, Clean Water Projects









Safe, Clean Water

and Natural Flood Protection

Community Preferred Program Report

Valley Water

Clean Water • Healthy Environment • Flood Protection



Left to right: Tony Estremera representing District 6; Richard P. Santos representing District 3; John L. Varela representing District 1; Gary Kremen representing District 7; Barbara Keegan representing District 2; Nai Hsueh representing District 5; Linda J. LeZotte representing District 4

Board of Directors

John L. Varela, District 1

Barbara Keegan, District 2

Richard P. Santos, District 3

Linda J. LeZotte, District 4

Nai Hsueh, District 5

Tony Estremera, District 6

Gary Kremen, District 7

About Valley Water

Valley Water (also known as Santa Clara Valley Water District) is a public agency that manages an integrated water resources system that includes the supply of safe, clean water; flood protection; and environmental stewardship on behalf of Santa Clara County's 2 million residents. Valley Water effectively manages 10 dams and surface water reservoirs, three water treatment plants, an advanced recycled water purification center, a state-of-the-art water quality laboratory, and nearly 400 acres of groundwater recharge ponds, providing wholesale water and groundwater management services to local municipalities and private water retailers who deliver drinking water to homes and businesses.

The mission of the Santa Clara Valley Water District is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.

Letter from the CEO



"We take pride in this work, which has been greatly aided by the local funding provided by the 2012 Safe, Clean Water and Natural Flood Protection Program."

As I write this letter, we are sheltering in place trying to stay safe during a pandemic. Yet, just a few months ago we were out and about, moving around freely, and conducting business as usual. I think it's safe to say we won't be returning to the way things were very soon. But during these uncertain times and as we move into a new normal, you can count on the people behind your water.

Valley Water is working hard to provide safe, clean water and natural flood protection to the people and businesses of Santa Clara County while caring for the environment.

We take pride in the work we do for the community, which has been greatly aided by the local funding provided by the 2012 Safe, Clean Water and Natural Flood Protection Program (2012 Safe, Clean Water Program). From securing the supply of safe, clean water during an unprecedented drought to providing natural flood protection and safeguarding aging infrastructure while restoring habitat and preventing pollution from contaminating our waterways, the 2012 Safe, Clean Water Program has been the key to meeting the county's water needs.

All active projects Valley Water committed to in the 2012 Safe, Clean Water Program are currently on track to meet or exceed the performance measures. This includes the completion of the Main Avenue and Madrone Pipelines Restoration Project to increase South County groundwater recharge and maximize imported water supplies to drinking water treatment plants in North County, along with: providing 50 new drinking water bottle refill stations to schools; removing more than 6,642 tons of trash along local streams; awarding nearly $13 million in grants and partnerships to support a variety of programs such as restoring stream habitats, pollution prevention, environmental education, and trails and open space; revitalizing 63 acres—three times the 2012 Safe, Clean Water Program goal; and conducting an average of 417 annual encampment cleanups since 2014—about eight times more than the 2012 Safe, Clean Water Program goal. We have also completed the Berryessa Creek Flood Protection Project, while beginning construction and making significant progress on the Permanente Creek, San Francisquito Creek and Upper Llagas Creek flood protection projects.

As with all long-term projects, times change, and unforeseen and unpredicted challenges will always arise. Challenges we predicted, and ones we could have never predicted, include a growing population, uncertain imported water supplies, climate change, more frequent natural disasters, an infrastructure that continues to age, ongoing operations and maintenance, and the increasing cost of mitigation.

If as a community we want to collectively meet these challenges and ensure a reliable water supply into the future, Valley Water must refresh and renew our 2012 Safe, Clean Water Program to bring it once again into alignment with our community needs and priorities.

To ensure the proposed Safe, Clean Water Program renewal reflects community needs and priorities while balancing the diverse interests of stakeholders to the furthest extent possible, we conducted a wide-reaching public engagement effort. Using a wide array of outreach tools and techniques, we engaged over 16,000 residents, businesses, employees, community organizations and other key stakeholders during an intensive six-month process.

This engagement has resulted in a proposed draft community-preferred program report with six top community priorities:

- **Priority A:** Ensure a Safe, Reliable Water Supply
- **Priority B:** Reduce Toxins, Hazards, and Contaminants in Our Waterways
- **Priority C:** Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters
- **Priority D:** Restore Wildlife Habitat and Provide Open Space
- **Priority E:** Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways
- **Priority F:** Support Public Health and Public Safety for Our Community

To ensure transparency, accountability and fiscal responsibility, the proposed Safe, Clean Water Program renewal will continue to be monitored by an external independent monitoring committee (IMC), which is an external citizen oversight committee. The proposed Safe, Clean Water Program renewal would also require independent audits every five years, and a change control process, which requires all adjustments be made by the Valley Water Board of Directors during a public board meeting. Modifications to key performance indicators (KPIs) or decisions to not implement a project would require a public hearing. Five-year implementation plans will also be developed to serve as checkpoints during implementation of the proposed Safe, Clean Water Program renewal.

In addition to forward looking plans, each year Valley Water will produce an annual report, which looks back on the prior fiscal year and reports on each project's expenditures and progress towards delivery of its KPIs. Those annual reports will be reviewed by the IMC, which will make recommendations to the Board regarding any program adjustments or modifications that may be required. Finally, the funding renewal would also continue exemptions for low-income seniors.

If approved by voters, the updated and enhanced Safe, Clean Water Program would act as a road map to providing safe, clean water and natural flood protection to Santa Clara County most effectively and responsibly, and its renewal will ensure that in our ever-changing world, the services that Valley Water delivers will remain constant and consistent with the community's priorities.

"This updated and enhanced Safe, Clean Water Program would act as a road map to providing safe, clean water and natural flood protection to Santa Clara County most effectively and responsibly and its renewal will ensure that in our ever-changing world, the services that Valley Water delivers will remain constant and consistent with the community's priorities."



Rick L. Callender, Esq.
Chief Executive Officer
Santa Clara Valley Water District



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Executive Summary

Overview

Valley Water's mission is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy. Supporting this mission is this draft community-preferred program developed to provide an updated and enhanced Safe, Clean Water and Natural Flood Protection Program (Safe, Clean Water Program). This proposed Safe, Clean Water Program renewal would continue to ensure a safe, reliable water supply; protect water supply infrastructure from earthquakes and natural disasters; and repair and replace aging infrastructure, such as dams, pipelines and reservoirs. The updated Safe, Clean Water Program would also help to reduce toxins, hazards and contaminants in our waterways; restore wildlife habitat and provide access to open space; and protect our residents and businesses from flooding while supporting the public health and public safety of our community and addressing climate change.

The proposed Safe, Clean Water Program renewal builds upon and, if approved by voters, would replace the existing 2012 Safe, Clean Water Program that is funded by a special parcel tax that voters approved overwhelmingly by 74% in 2012. All projects funded by the current special parcel tax are on track to meet the performance measures, known as key performance indicators (KPIs), and a few have exceeded those measures.

As Valley Water has implemented the 2012 Safe, Clean Water Program, a series of challenges and changes have emerged, affecting the community's needs as they relate to water resources. Our county's population is burgeoning. Climate change, more frequent natural disasters and uncertain imported water supplies go hand-in-hand. Our infrastructure continues to age. We are experiencing more delays in regulatory permitting, and ongoing operations, maintenance and environmental mitigation of projects come with ongoing and increasing costs. Combined, these create challenges in continuing to provide safe, clean drinking water, as well as flood protection and environmental stewardship on behalf of the community. Addressing these challenges and meeting future water needs requires realigning and expanding upon the 2012 Safe, Clean Water Program and renewing it.

SAFE, CLEAN WATER PROGRAM OVERVIEW

- Proposed renewal of existing Safe, Clean Water Program to ensure continued local funding for vital projects benefitting the community
- Updates existing projects and adds new projects to address changing conditions and align with the community's needs
- Adds a new priority to better reflect what is important to the community
- Continues independent monitoring of the proposed Safe, Clean Water Program with all expenditures published annually and external independent audits
- Maintains current parcel tax rate
- Based on input from thousands of county residents and stakeholders

To develop this newly proposed Safe, Clean Water Program, Valley Water conducted an extensive public outreach effort engaging thousands of community members and stakeholders reaching more than 21,000 total. The outreach tools include a dedicated Safe, Clean Water website; online community surveys that were conducted in English, Spanish, Vietnamese and Chinese and received more than 17,100 responses; more than 85 in-person and virtual presentations reaching more than 4,000 residents; telephone town halls and webinars; and a Blue-Ribbon Forum for stakeholders and community leaders.

There are several key themes that staff heard in numerous stakeholder meetings, including the Blue-Ribbon Forum, that have helped shape certain elements within the proposed Safe, Clean Water Program renewal. These concepts include: keeping the proposed community-preferred program flexible enough to adapt to emerging challenges, while planning for long-term needs; protecting and ensuring water supply reliability, repairing aging infrastructure, bolstering resources for long-term maintenance, operations and mitigation needs; supporting more multi-benefit projects and incorporating climate change adaptation strategies across projects;

supporting trash and homeless encampment cleanups; expanding grant funding for hydration stations, water conservation, pollution prevention, and wildlife habitat/open space, as well as streamlining the process and providing increased access to smaller organizations, technology start-ups and individuals; continuing support for environmental stewardship and habitat restoration; and supporting flood protection projects to protect communities from flooding.

The result of this six-month public engagement effort is a draft community-preferred program that would update, enhance and renew the Safe, Clean Water Program, and is presented in this report.

The proposed Safe, Clean Water Program renewal would continue to honor prior commitments made under the 2012 Safe, Clean Water Program in carrying forward all active projects and meeting associated KPIs. It would continue the current five priorities and proposes to add a sixth priority based on community input and feedback. Below is a summary list of the six priorities, emphasizing key efforts that are now enhanced or new under each priority. The proposed priorities also build upon existing projects that would continue.

Priority A: Ensure a Safe, Reliable Water Supply

Priority A projects will upgrade aging water infrastructure, such as dams, pipelines and water storage and treatment systems, to reduce the risk of water outages. In addition to carrying forward existing projects, it would contain two new projects, including the Pacheco Reservoir Expansion Project which will increase water storage to provide more security for our drinking water supplies in emergencies and help moderate the effects of climate change. The other new project would provide water conservation rebates and programs to increase water-use efficiency and ensure sustainability for drinking water supplies throughout the county.



An egret takes flight surrounded by mallards.

Priority B: Reduce Toxins, Hazards, and Contaminants in Our Waterways

Priority B projects use multiple strategies to reduce and remove contaminants in our local creeks, streams and bays. Along with mercury treatment systems in our reservoirs, projects under this priority prevent toxins from entering waterways by working with municipalities and other agencies across the region to reduce runoff pollution. In addition to carrying forward existing projects, the priority would include funding to support the new green stormwater infrastructure. It would also continue projects that provide rapid emergency response to hazardous materials spills as well as support volunteer cleanup efforts.

Priority C: Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters

The Priority C project will help protect our drinking water supply and water quality infrastructure from natural disasters, such as earthquakes. This priority provides partial funding to retrofit Anderson Dam so that it can safely withstand a large earthquake. Known as the Anderson Dam Seismic Retrofit project, it would continue to ensure public safety and secure a reliable water supply.

Priority D: Restore Wildlife Habitat and Provide Open Space

Priority D projects restore and protect wildlife habitat. Work under this priority includes controlling non-native, invasive plants; replanting native species; and maintaining previously replanted areas. Other projects include removing barriers to fish movement, improving steelhead habitat and stabilizing eroded creek banks. Under this priority, projects supporting riparian planting and invasive plant removal, fish passage and fish habitat improvements would be enhanced with additional funding.

To support restoration projects, Valley Water would continue to build and update a comprehensive watershed database that tracks stream ecosystem conditions, helping Valley Water and other organizations make informed watershed, asset management and natural resource decisions.

Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways

Priority E focuses on providing flood protection through major capital construction projects. Projects are prioritized to protect the largest number of people, homes and businesses,

as well as to safeguard the highways, streets, public transportation and business centers that people depend on for their livelihoods. In addition to continuing the existing flood protection projects, some of them with enhanced funding, this priority would now include phase three of the Lower Berryessa Creek Flood Protection Project.

Almost all the construction projects under this priority include a preferred project that relies on state and federal government funding and a local-funding-only project. Should federal funding become scarce, Valley Water would reduce the project scope to the local funding only project, as described in the individual project summaries. Whenever possible, Valley Water also leverages funds from the state, local municipalities and other stakeholders.

Priority F: Support Public Health and Public Safety for Our Community

With the advent of the COVID-19 pandemic that drastically altered our worldview, the need for critical public services such as safe, clean water supplies and essential water infrastructure, particularly during emergencies, has come into sharper focus. This newly proposed priority pulls together multi-benefit projects that were previously placed under other priorities in the 2012 Safe, Clean Water Program and groups them based on their common benefit of supporting public health and public safety along our waterways and critical infrastructure.

This priority would include enhanced funding to support public safety by partnering with local municipalities to address encampments along waterways; reducing trash and other pollutants from entering waterways from encampments; and ongoing vegetation control and sediment removal activities to maintain conveyance capacity of flood protection projects. It would also provide additional funding for grants and partnerships for local agencies; organizations and individuals for water conservation; pollution prevention, creek cleanups and education; wildlife habitat restoration; and access to trails and open space.

Additionally, it would include two newly proposed efforts: a project to fund public art to beautify Valley Water property and infrastructure to deter graffiti and litter; and a long-term effort to ensure that existing flood protection infrastructure continues to function sustainably for continued public safety. Other projects would include vegetation management for access and fire safety; removing flood-inducing blockages; and improving coordination and communication in flood emergencies.

With the advent of the COVID-19 pandemic that drastically altered our worldview, the critical need for safe, clean water supplies and essential water infrastructure, particularly during emergencies, has come into sharper focus.

Funding Safe, Clean Water: Transitioning from the Old Program

Beginning with the previous 2000 Clean, Safe Creeks and Natural Flood Protection Plan and leading to the passage of the current 2012 Safe, Clean Water Program, the continuous need for such a multi-benefit, community-preferred measure has never been more evident than today. Longer-term solutions for both existing and emerging challenges to providing safe, clean drinking water, natural flood protection and environmental stewardship to the community could be better met with a realigned and updated program that provides ongoing local funding for community-preferred projects.

If voters approve renewing the existing tax measure, the updated Safe, Clean Water Program would replace in its entirety the 2012 Safe, Clean Water Program. Passage of the updated Safe, Clean Water Program would extend the current annual parcel tax that allows Valley Water to deliver



Valley Water headquarters view from across a groundwater recharge pond

the existing and new projects that our community values beginning in fiscal year 2022. If approved, the proposed Safe, Clean Water Program renewal would remain active until repealed by voters.

Furthermore, after a period of no longer than 15 years, the Valley Water Board would evaluate the need for the Safe, Clean Water Program and determine whether the special tax should be reduced or repealed or maintained to build additional projects that accomplish the community identified Safe, Clean Water Program priorities. Should the Board determine that no additional projects are needed, the Safe, Clean Water and Natural Flood Protection Program special tax would be reduced accordingly to reflect a transition from funding new projects to funding operation, maintenance and replacement of projects that were constructed with Safe, Clean Water Program funds. This process would include the Valley Water advisory committees and the Safe, Clean Water Program's independent monitoring committee (IMC) making recommendations to the Board on whether to reduce, repeal or maintain the special tax. This evaluation will take place every 15 years.

Any existing funds collected under the current 2012 Safe, Clean Water Program would be used to continue corresponding projects under the proposed Safe, Clean Water Program renewal. And since this would be an extension of the 2012 Safe, Clean Water Program, the parcel taxes will be assessed using the same rate structure and will continue to include exemptions for qualifying low-income seniors.

If voters approve, the renewed and replaced voter-approved parcel tax would fund the Safe, Clean Water and Natural Flood Protection Program as a community-preferred program, which includes carrying forward existing projects plus the addition of enhanced and new projects.



2012 Safe, Clean Water Program - Construction of Rancho San Antonio detention basin, which is part of the Permanente Creek Flood Protection Project.

Approximately $45.5 million is expected to be collected annually, amounting to approximately $682.5 million in 2020 dollars over the first 15 years of this new program. In addition, the Board of Directors reserves the right to vote on an annual escalator to adjust for inflation; additional details may be found in the Resolution (Appendix A).

Financing the Program

A combination of debt financing and pay-as-you-go funding would pay for capital projects. Debt financing will provide upfront funding for Safe, Clean Water capital projects that would otherwise be delayed until tax revenues were accumulated.

Accountability and Transparency

As with the 2012 Safe, Clean Water Program, the Valley Water Board would appoint an independent monitoring committee (IMC) to track the progress of the proposed Safe, Clean Water Program to ensure transparency and accountability. Additionally, to provide transparency of all activities to the public, the renewed Safe, Clean Water Program would require an external, independent audit every five years, an annual rate-setting report, an annual report of project expenditures and progress towards meeting KPIs, and five-year implementation plans. All IMC, staff and auditor reports would be available for public viewing. In compliance with a change control process, any update or changes to the proposed Safe, Clean Water and Natural Flood Protection Program would be made in publicly noticed meetings or public hearings, which are also streamed live on Valley Water's website.

Background

Timeline

2000

Santa Clara County voters approved the 15-year Clean, Safe Creeks and Natural Flood Protection Plan (Clean, Safe Creeks Plan), a special parcel tax to address community needs for enhanced stream stewardship and flood protection.

2012

74 percent of voters approved the 15-year Safe, Clean Water and Natural Flood Protection Program (Safe, Clean Water Program), a special parcel tax to address projects under five priorities.

2020

Based on changing circumstances and community needs, Valley Water conducts outreach to re-evaluate the Safe, Clean Water Program for the public. A renewed Safe, Clean Water Program is proposed to enhance and update the 2012 Safe, Clean Water and Natural Flood Protection Program. If approved by voters in November 2020, the proposed program would renew the funding at the same parcel tax rate structure approved under the previous Safe, Clean Water Program to ensure a seamless continuation of critical water-related services for Santa Clara County.



History of Safe, Clean Water Program

In 2000, seeing a need to address stream stewardship and flood protection issues in the county, Valley Water created, and voters approved, a special parcel tax - the Clean, Safe Creeks and Natural Flood Protection Plan (Clean, Safe Creeks Plan). The funding from this plan supported projects to restore habitat, maintain healthy creek and bay ecosystems, improve water quality, reduce flood risks, and provide open space and recreational opportunities. It also created an independent monitoring committee to oversee progress and ensure the plan was meeting its outcome goals cost-effectively.

As the Clean, Safe Creeks Plan neared its end, Valley Water conducted outreach to determine community priorities regarding water, flood protection and the environment. Using extensive input gained over 18 months, Valley Water put together a program that would continue local funding, make up for diminished federal funding, line up with community priorities, update aging/outdated infrastructure, address new regulatory and policy requirements, and ensure an uninterrupted flow of services.

In 2012, Santa Clara County voters passed the Safe, Clean Water and Natural Flood Protection Program (Safe, Clean Water Program) ballot measure by an overwhelming majority of nearly 74 percent. Voters supported the 2000 Clean, Safe Creeks Plan and the 2012 Safe, Clean Water Program because each represented the community's values around clean water, the environment and flood protection, which are key tenets of Valley Water's work.

Like the Clean, Safe Creeks Plan, the 2012 Safe, Clean Water Program was also created with a commitment to accountability and transparency and included an independent monitoring committee (IMC) to oversee the program's progress and ensure that outcomes would be met in a cost-effective manner. In addition, the 2012 Safe, Clean Water Program also required three independent external audits over 15 years.

The projects in the 2012 Safe, Clean Water Program have performance measures known as key performance indicators (KPIs). For the existing program's flood protection projects that rely heavily on federal funding, there are two KPIs: the preferred project with federal funding; and the local-funding-only project. As many of the flood protection projects have not yet received federal funds to achieve the preferred project KPIs, Valley Water has continued to focus on moving those projects forward toward delivery of the local-funding-only KPIs, while continuing to seek federal and other external funding sources. As a result, all flood protection projects are on track to meet or exceed their KPIs.



Wildflower with reservoir in the background.

Because the Clean, Safe Creeks Plan, the 2012 Safe, Clean Water Program and the newly proposed Safe, Clean Water Program renewal were created to benefit the community, input from our community has been instrumental in determining the priorities that are the focus of the funding. Projects were selected to deliver enhanced water quality and reliability, improved habitat and environment and reduced flood risks for thousands of residents and businesses.

The development of all three ballot measures has included extensive community outreach as an integral part of their formation. Over the life of each of the voter-approved measures, through the annual reports, audits, IMC reports and Board discussions, the community is kept informed of the progress we are making on the multi-benefit projects that comprise the Safe, Clean Water Program.

Why Renew the Safe, Clean Water Program Now?

Valley Water is committed to providing safe, clean water and natural flood protection and to protecting and enhancing the environment. As new challenges face Valley Water and the community it serves, an updated and renewed Safe, Clean Water Program would help us streamline and keep our work relevant while securing our future water resources.

Challenges facing Valley Water and the broader community regarding water-related issues include a growing population in our county, aging infrastructure, uncertain imported water supplies, climate change and more extreme weather. We are also experiencing more regulatory permitting delays, as well as ongoing operations, maintenance and environmental mitigation costs. More recently, the advent of the COVID-19 pandemic imposed a new and significant challenge to delivering safe, clean water and natural flood protection.

WHY UPDATE AND EXTEND SAFE, CLEAN WATER NOW?

To meet new and expanding challenges, we need to refresh and realign the 2012 Safe, Clean Water Program. Challenges that a proposed renewal of the Safe, Clean Water Program will help us better meet include:

- A growing Santa Clara County population
- Climate change and extreme weather
- More frequent natural disasters
- Aging infrastructure
- Ongoing operations, maintenance and mitigation costs
- More delays in regulatory permitting
- Uncertain imported water supplies

Updating and Expanding the Safe, Clean Water Program

Addressing emerging and growing challenges requires creative thinking and a deep understanding of how these challenges will affect our existing and future projects. That is one key to the proposed realignment of the Safe, Clean Water Program and its potential renewal.

To develop solutions, Valley Water staff participated in a two-day workshop in January 2020 to evaluate the projects in the existing 2012 Safe, Clean Water Program. Staff members documented changes, discussed challenges and brainstormed new opportunities for improvement. Staff explored ways to address increasing operations, maintenance and mitigation costs; strategies to improve infrastructure reliability and integrate climate change adaptation and mitigation; ways to streamline the grants program; and approaches to support public health and public safety.

With an eye toward these important considerations, staff set about suggesting updates and enhancements for a proposed Safe, Clean Water Program renewal. For some of the projects under the 2012 Safe, Clean Water Program, realignment was necessary, therefore certain key performance indicators for existing projects were adjusted to ensure the delivery of the most effective, efficient and responsible projects. Additionally, new projects or project elements are proposed to address changed circumstances or new needs that have arisen since the passage of the 2012 Safe, Clean Water Program.

Once a project is constructed, it is not necessarily finished for all time. Projects, particularly flood protection projects, require regular maintenance to continue functioning as designed and providing benefits to the community. This proposed update of the Safe, Clean Water Program takes that into account, providing for long-term maintenance and operation of the included projects.

Another important part of completing a project is mitigating any negative impacts it might have on wildlife or the environment. Just as projects take maintenance, mitigation takes monitoring to ensure it works as designed. This proposed Safe, Clean Water Program renewal allows us to ensure that our mitigation is functioning for the benefit of the projects and the environment.

We have also added new projects where significant changes in field conditions warrant updated tactics. Where feasible, we have added these new projects to address these changed circumstances.

The proposed Safe, Clean Water Program renewal was also updated with a new priority—Priority F: Support Public Health and Public Safety for Our Community. With the advent of the COVID-19 pandemic that drastically changed the world, the critical need for reliable, safe and clean water, particularly during emergencies, came into even sharper focus. Priority F would address the need for enhanced public health and public safety by pulling projects that have multiple benefits from other priority areas. The projects are chosen based on their common support of public health and public safety along our waterways and key water infrastructure.

Once a project is constructed, it is not necessarily finished for all time. Projects, particularly flood protection projects, require regular maintenance to continue functioning as designed and providing benefits to the community.

Projects under Priority F would include coordinating with cities to address encampments along waterways; reducing trash and other pollutants from entering waterways from encampments; removing flood-inducing blockages; managing vegetation; and removing sediment to maintain conveyance capacity of flood protection projects. Priority F also supports grants and partnerships for agencies, organizations and individuals for water conservation, pollution prevention, creek cleanups and education, wildlife habitat restoration, access to trails and open space; and graffiti and litter removal, as well funding for public art to beautify Valley Water property and infrastructure.

Community input has played a critical part in developing the proposed Safe, Clean Water Program renewal and in determining the changes necessary to align with community priorities and expectations. Combined with Valley Water's expertise in executing projects and familiarity with current conditions, and the Board of Directors' guidance, community input has helped round out proposed Safe, Clean Water Program updates and make the renewed Program the most responsive it can be.



2012 Safe, Clean Water Program: Looking upstream from the Friendship Bridge at the completed portion of the San Francisquito Creek Flood Protection Project from S.F. Bay to Highway 101

Community Engagement

To develop this proposed Safe, Clean Water Program renewal, Valley Water conducted a comprehensive and intensive public outreach effort engaging more than 21,000 residents, community members and stakeholders.

The outreach included conducting online community input surveys, which reached more than 17,100 residents. The surveys were provided in English, Spanish, Vietnamese and Chinese, and also included a student version to reach Santa Clara County youth. Our dedicated Safe, Clean Water Program microsite (www.safecleanwater.org) served as the landing page for information on the proposed program renewal as well as a place to take the survey and provide input. To achieve a high response rate and receive the widest input, the surveys were promoted through a variety of tools including multi-language videos, social media channels, texting and telephone banking efforts. Valley Water also distributed the survey through our blogs, eNews blasts and wide e-mail distribution lists to community stakeholders and our various partners with more than 1.4 million touches. Additionally, a public information and education outreach effort resulted in 14 million impressions. This outreach included print advertorials, radio spots, billboards and digital and social media posts that invited people to complete the surveys and provide their input.

Despite the ongoing public health crisis, new technology tools allowed Valley Water to seamlessly continue to connect virtually with the community during the COVID-19 pandemic. Outreach continued through early July, resulting in staff reaching more than 4,000 residents by making more than 85 in-person and virtual presentations, webinars and infrastructure tours to various stakeholders and community groups, including Board Committees, Board Advisory Committees and Board Commissions, the Safe, Clean Water Program Independent Monitoring Committee, Water Retailers and Water Ambassadors, as well as diverse stakeholder groups, including employees, civic, community groups and neighborhood groups. Valley Water also hosted a virtual Blue-Ribbon Forum, with nearly 100 community leaders, stakeholders and employees participating and providing feedback on the proposed renewal of the Safe, Clean Water Program. A telephone town hall was also conducted in early July that reached more than 2,800 residents county wide.

These collective and combined efforts garnered more than 21,000 direct touches to residents countywide, more than any previous past program efforts.

COMMUNITY ENGAGEMENT TOOLS

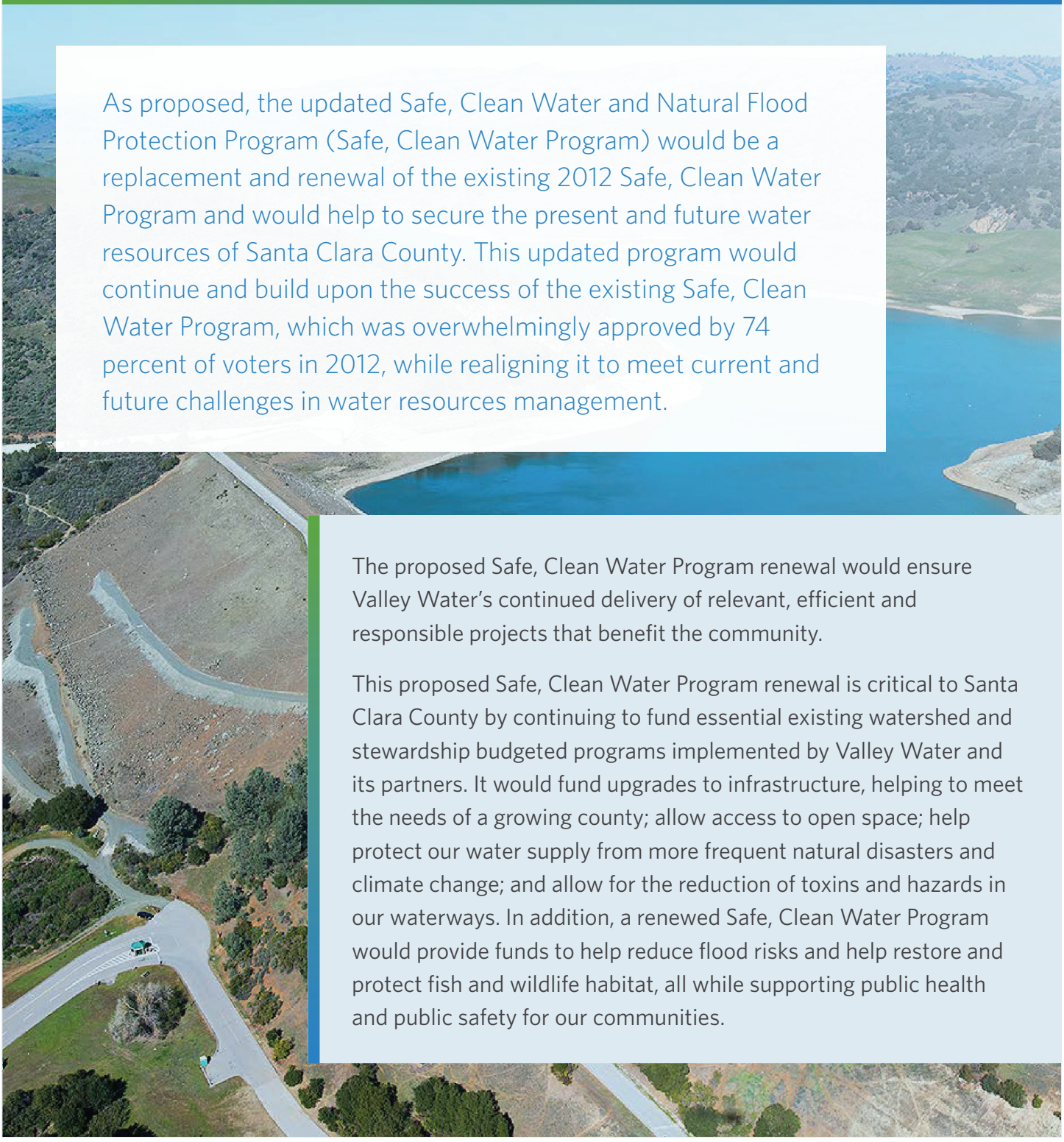
- Dedicated website: 23,000 visitors
- Online community input surveys: 17,100 respondents
- Digital/social media efforts: 5.5 million impressions with 40,000 link clicks
- 15 videos: more than 702,000 views
- Telephone town hall: 2,800 county residents
- Water supply outreach tours: 446 attendees
- Employee presentations: 900 attendees
- Virtual speaker's bureau: 400 attendees
- Virtual Blue-Ribbon Forum: 35 stakeholder participants
- Stakeholder/Partner meetings: 175 stakeholders



Valley Water staff - the people behind your water.

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Introducing the Safe, Clean Water Program Update



As proposed, the updated Safe, Clean Water and Natural Flood Protection Program (Safe, Clean Water Program) would be a replacement and renewal of the existing 2012 Safe, Clean Water Program and would help to secure the present and future water resources of Santa Clara County. This updated program would continue and build upon the success of the existing Safe, Clean Water Program, which was overwhelmingly approved by 74 percent of voters in 2012, while realigning it to meet current and future challenges in water resources management.

The proposed Safe, Clean Water Program renewal would ensure Valley Water's continued delivery of relevant, efficient and responsible projects that benefit the community.

This proposed Safe, Clean Water Program renewal is critical to Santa Clara County by continuing to fund essential existing watershed and stewardship budgeted programs implemented by Valley Water and its partners. It would fund upgrades to infrastructure, helping to meet the needs of a growing county; allow access to open space; help protect our water supply from more frequent natural disasters and climate change; and allow for the reduction of toxins and hazards in our waterways. In addition, a renewed Safe, Clean Water Program would provide funds to help reduce flood risks and help restore and protect fish and wildlife habitat, all while supporting public health and public safety for our communities.

An Opportunity to Prepare for the Future

A proposed Safe, Clean Water Program renewal would provide funding for additional environmental benefits, new and existing infrastructure and flood protection projects, and operations and maintenance of projects. The proposed renewal would provide for an expanded grants program with additional funding and access for new public health and public safety elements, and it would focus resources on fire safety and removing blockages in creeks. It would also support addressing homeless encampments and impacted water quality along our creeks and waterways, and better adapt to and meet the growing challenges that stem from climate change and extreme weather patterns, such as severe drought, flooding, and wildfires.

The following pages summarize all the projects, existing and newly proposed, with their updated key performance indicators, under each of the following priorities:

A
Ensure a Safe, Reliable Water Supply



B
Reduce Toxins, Hazards and Contaminants in our Waterways



C
Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters



D
Restore Wildlife Habitat and Provide Open Space



E
Provide Flood Protection to Homes, Businesses, Schools, Streets and Highways



F
Support Public Health and Public Safety for Our Community



FULL LIST OF PROJECTS

Priority A	
A1	Pacheco Reservoir Expansion
A2	Water Conservation Rebates and Programs
A3	Pipeline Reliability
Priority B	
B1	Impaired Water Bodies Improvement
B2	Inter-Agency Urban Runoff Program
B3	Hazardous Materials Management and Response
B4	Support Volunteer Cleanup Efforts
Priority C	
C1	Anderson Dam Seismic Retrofit
Priority D	
D1	Management of Riparian Planting and Invasive Plant Removal
D2	Revitalize Riparian, Upland and Wetland Habitat
D3	Sediment Reuse to Support Shoreline Restoration
D4	Fish Habitat and Passage Improvement
D5	Ecological Data Collection and Analysis
D6	Restoration of Natural Creek Functions
D7	Partnerships for the Conservation of Habitat Lands

FULL LIST OF PROJECTS

Priority E	
E1	Coyote Creek Flood Protection, Montague Expressway to Tully Road—San José
E2	Sunnyvale East and Sunnyvale West Channels Flood Protection, San Francisco Bay to Inverness Way and Almanor Avenue—Sunnyvale
E3	Lower Berryessa Flood Protection, including Tularcitos and Upper Calera Creeks (Phase 3)—Milpitas
E4	Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive—San José
E5	San Francisquito Creek Flood Protection, San Francisco Bay to Upstream of Highway 101—Palo Alto
E6	Upper Llagas Creek Flood Protection, Buena Vista Avenue to Llagas Road—Morgan Hill, San Martin, Gilroy
E7	San Francisco Bay Shoreline Protection—Milpitas, Mountain View, Palo Alto, San José, Santa Clara, and Sunnyvale
E8	Upper Guadalupe Flood Protection, Highway 280 to Blossom Hill Road—San José
Priority F	
F1	Vegetation Control and Sediment Removal for Capacity
F2	Emergency Response Planning and Preparedness
F3	Flood Risk Assessment Studies
F4	Vegetation Management for Access and Fire Safety
F5	Good Neighbor Program: Encampment Cleanup
F6	Good Neighbor Program: Graffiti and Litter Removal and Public Art
F7	Emergency Response Upgrades
F8	Sustainable Creek Infrastructure for Continued Public Safety
F9	Grants and Partnerships for Safe, Clean Water, Flood Protection and Environmental Stewardship

Priority A

Ensure a Safe, Reliable Water Supply



Priority A projects would upgrade aging water infrastructure, such as dams, pipelines and water storage and treatment systems, to reduce the risk of water outages. In addition to carrying forward existing projects, it would contain two new projects, including the Pacheco Reservoir Expansion Project to increase water storage to provide more security for our drinking water supplies in emergencies and through the effects of climate change. The other new project is to provide water conservation rebates and programs to increase water-use efficiency and ensure sustainability for drinking water supplies throughout the county.

PROJECT A1
PACHECO RESERVOIR EXPANSION

A collaboration between Valley Water, the San Benito County Water District and the Pacheco Pass Water District, the Pacheco Reservoir Expansion Project is a strategic and long-term investment toward ensuring a more reliable supply of safe, clean drinking water in the face of climate change.

This project will boost Pacheco Reservoir's operational capacity from 5,500 acre-feet to up to 140,000 acre-feet, enough to supply up to 1.4 million residents with water for one year in an emergency. Located in southeast Santa Clara County, the expanded reservoir will also reduce the frequency and severity of water shortages during droughts, protect our drinking water supply and infrastructure and improve habitat for fish.

Valley Water has taken into consideration 2030 and 2070 projected future conditions with climate change to ensure that the reservoir is not only viable today, but can withstand the changes expected in the future.

Benefits

- Ensures a reliable supply of drinking water
- Provides an emergency supply of drinking water
- Improves habitat for fish, including federally threatened steelhead
- Reduces flood risk to disadvantaged communities

PROJECT A1: PACHECO RESERVOIR EXPANSION

- Ensures a reliable and sustainable supply of drinking water
- Provides an emergency supply of drinking water
- Reduces flood risk
- Improves habitat for fish



In the fall of 2019, Valley Water performed exploratory drilling to gather information about the soil and rock characteristics, needed for the project design.

PROJECT A2: WATER CONSERVATION REBATES AND PROGRAMS

- Increases water-use efficiency
- Increases water supply reliability
- Reduces pollution by reducing irrigation runoff
- Saves energy and reduce operating costs
- Reduces CO2 emissions



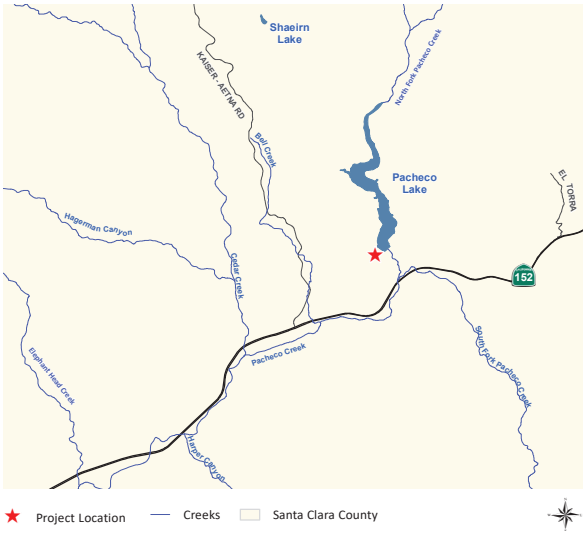
Succulent garden

- Allows for environmental water management that supports habitat projects and other environmental water needs
- Addresses climate change

Key performance indicator

1. Provide a portion of funds, up to $10 million, to help construct the Pacheco Reservoir Expansion Project.

Geographic area of benefit: Countywide



Estimated funding from Safe, Clean Water Renewal: $10 million

Estimated total project cost: $1.3 billion

PROJECT A2
WATER CONSERVATION REBATES AND PROGRAMS

This project to help meet and exceed long-term water conservation and reliability goals would increase water-use efficiency in the landscape, residential, schools and commercial sectors through water conservation rebates, technical assistance and public education.

Water Conservation rebate programs may include a residential leak detection and assistance program, an expanded landscape rebate program that promotes California-native plant species as well as water-saving plants, advanced metering infrastructure (AMI) and a restaurant-efficiency and school-efficiency upgrade program.

Water use requires a lot of energy to extract, convey, treat and distribute. By reducing the demand for water, conservation reduces greenhouse gas emissions. Conservation also helps adapt to climate change by conserving limited water supplies and lessening demand in the face of an uncertain water-supply future.

Benefits

- Helps county residents exceed the countywide goal of conserving 110,000 acre-feet of water per year by 2040
- Increases water supply reliability
- Reduces greenhouse gases
- Reduces pollution to the Bay by reducing irrigation runoff

Key performance indicator

1. Award up to $1 million per year toward specified water conservation program activities, including rebates, technical assistance, and public education, within the first seven (7) years of the Program.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $7.9 million

Estimated total project cost: $51.3 million

PROJECT A3
PIPELINE RELIABILITY

This project constructs four (4) line valves at various locations along the East, West and Snell treated water pipelines in Saratoga, Cupertino and San José.

Continued from the 2012 Safe, Clean Water Program, this project is closing out its design phase and nearing construction. Once constructed, this project will allow Valley Water to isolate sections of pipelines for scheduled maintenance and repairs following a catastrophic event, such as a major earthquake, and allow the network of emergency wells to operate, even when there is damage upstream and downstream of individual wells.

Benefits

- Supports shorter service interruption in the case of a pipeline break
- Provides operational flexibility for pipeline maintenance work
- Improves drinking water reliability
- Reduces the amount of water released in streams in the event of a pipeline maintenance or repair.

PROJECT A3: PIPELINE RELIABILITY

- Improves drinking water reliability
- Provides flexibility for pipeline maintenance
- Supports shorter service interruptions



Shannon line valve

Key performance indicator

1. Install four (4) new line valves on treated water distribution pipelines.

Geographic area of benefit:

Mountain View, Sunnyvale, Santa Clara, Cupertino, Saratoga, Los Gatos, Los Altos, Campbell, San José and Milpitas



Estimated funding from Safe, Clean Water Renewal: $9.8 million

Estimated total project cost: $11.9 million

What happens to Priority A projects if funding is not available?

Pipeline rehabilitation and upgrades may be delayed or suspended indefinitely. Water Conservation Rebates and Programs will likely not meet their long-term water supply reliability goals.

Priority B

Reduce Toxins, Hazards, and Contaminants in Our Waterways



PROJECT B1: IMPAIRED WATER BODIES IMPROVEMENT

- Reduces pollutants in streams, reservoirs and groundwater
- Reduces methylmercury in reservoirs
- Reduces greenhouse gases

Priority B projects use multiple strategies to reduce and remove contaminants in our local creeks, streams and bays. Along with mercury treatment systems in our reservoirs, projects under this priority prevent toxins from entering waterways by working with municipalities and other agencies across the region to reduce runoff pollution. In addition to carrying forward existing projects, the priority would include funding to support the implementation of green stormwater infrastructure. It would also continue projects to provide rapid emergency response to hazardous materials spills and to support volunteer cleanup efforts.

PROJECT B1
IMPAIRED WATER BODIES IMPROVEMENT

This project reduces pollutants in streams, reservoirs and groundwater of Santa Clara County by supporting surface water quality pollution prevention activities. These programs address water quality concerns currently identified by local and state regulatory agencies, as well as contaminants of emerging concern. Initiatives under this project are consistent with the Regional Water Quality Control Board (RWQCB) impaired water bodies designation and Total Maximum Daily Loads (TMDLs), which are the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. Under this project, Valley Water studies and implements methods to reduce methylmercury formation in reservoirs, and helps create and carry out realistic plans to reduce contaminants, such as nutrients, bacteria, pesticides, polychlorinated biphenyls (PCBs) and others, in local creeks and reservoirs.

This project addresses both greenhouse gas (GHG) reduction and climate change adaptation, as reservoirs are a major source of GHG emissions (i.e. methane) during low oxygen conditions. Oxygenation is the current mechanism to control mercury in fish and may reduce methane emissions. Oxygenation can also reduce the formation of harmful algal blooms, which may become more frequent with warmer temperatures.

Benefits

- Reduces contaminants in streams and reservoirs
- Improves water quality, including water slated for drinking water treatment plants
- Increases understanding of mercury cycling in reservoirs to develop strategies that reduce toxic methylmercury in fish consumed by people and wildlife



Calero Reservoir Oxygenation System

PROJECT B2: INTER-AGENCY URBAN RUNOFF PROGRAM

- Reduces contaminants in stormwater
- Maintains programs or devices to reduce trash in creeks
- Addresses surface water quality improvements
- Implements green stormwater infrastructure projects



Trash boom cleaning on Lower Silver Creek.

- Increases the scientific understanding of environmental pollutants to assist in developing actions to manage them
- Supports regulatory compliance with surface water quality standards for local creeks and reservoirs
- Addresses climate change

Key performance indicators

1. Investigate, develop, and implement actions to reduce methylmercury in fish and other organisms in the Guadalupe River Watershed.
2. Prepare and update a plan for the prioritization of surface water quality improvement activities, such as addressing trash and other pollutants.
3. Implement at least two (2) priority surface water quality improvement activities identified in the plan per 5-year implementation period.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $32.8 million

Estimated total project cost: $32.8 million

PROJECT B2
INTER-AGENCY URBAN RUNOFF PROGRAM

This project supports Valley Water's continued participation in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and South County stormwater programs. These programs enable Valley Water to reduce stormwater pollution through technical support and regional leadership. In addition, this project supports stormwater pollution prevention activities in South County Watersheds and green stormwater infrastructure (GSI). GSI allows rainwater runoff from roads, parking lots and other impervious surfaces to soak into the ground and be filtered by soil rather than discharge into storm drains that transport the water to creeks.

Project B2 allows Valley Water to participate in the regulatory development process related to stormwater by participating in stormwater permit re-issuance and providing review, analysis and comments on various water quality regulatory efforts. This project also allows Valley Water to collaborate with local agencies on public education and outreach activities to help prevent urban runoff pollution at the source.

Multi-benefit projects, such as green stormwater infrastructure, are important strategies to address water quality. Green infrastructure uses plants to soak water into the ground, which slows down, spreads and helps absorb rainwater instead of having it go down a storm drain. This improves water quality, can increase groundwater supplies and reduces peak flows to a creek.

Benefits

- Partners with municipalities and other agencies to reduce contaminants in stormwater and improve surface water quality in our streams, reservoirs, lakes and wetlands
- Maintains Valley Water compliance with the Regional Water Quality Control Board

requirements in National Pollutant Discharge Elimination System (NPDES) permits

- Allows continued participation in SCVURPPP and South County urban runoff programs
- Allows Valley Water to help direct required monitoring efforts in ways that benefit Valley Water programs and projects
- Promotes stormwater pollution prevention
- Facilitates collaboration with partners on stormwater projects that provide multiple benefits and support Valley Water's mission
- Addresses climate change

Key performance indicators

1. Address trash in creeks by maintaining trash capture devices or other litter control programs.

2. Maintain Valley Water's municipal stormwater compliance program and partner with cities to address surface water quality improvements, including participation in at least three (3) countywide, regional, or statewide stormwater program committees to help guide regulatory development, compliance, and monitoring.

3. Support at least one (1) stormwater quality improvement activity per 5-year implementation period in Santa Clara County, including providing up to $1.5 million over 15 years to support implementation of green stormwater infrastructure consistent with Santa Clara Basin and South County Stormwater Resource Plans.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $19.8 million

Estimated total project cost: $45.2 million

PROJECT B3
HAZARDOUS MATERIALS MANAGEMENT AND RESPONSE

This project allows Valley Water to continue providing a local number to report hazardous materials spills 24 hours a day, 7 days a week. Valley Water staff will respond within two (2) hours of the initial report, with spill cleanup in Valley Water rights-of-way performed in a timely manner. Appropriate agencies will be alerted when spills are outside Valley Water jurisdiction.

Benefits

- Prevents and reduces contaminants in surface and groundwater
- Encourages public to engage in protecting our waterways
- Provides a quick, professional response that reduces impacts of hazardous materials spills

PROJECT B3: HAZARDOUS MATERIALS MANAGEMENT AND RESPONSE

- Prevents and reduces contaminants in surface and groundwater
- Encourages public to protect our waterways
- Allows for quick responses to reduce impacts of hazardous spills



Vehicle accident at Valley Water facility.

PROJECT B4: SUPPORT VOLUNTEER CLEANUP EFFORTS

- Reduces contaminants entering our waterways and groundwater
- Engages and educates the community through watershed stewardship
- Leverages volunteer community resources for efficient use of funds



National River Cleanup Day 2019.

Key performance indicator

1. Respond to 100% of hazardous materials reports requiring urgent on-site inspection in two (2) hours or less.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $1.1 million

Estimated total project cost: $4.2 million

PROJECT B4
SUPPORT VOLUNTEER CLEANUP EFFORTS

This project provides funding for Valley Water's creek stewardship program to support volunteer cleanup activities, such as National River Cleanup Day, California Coastal Cleanup Day, the Great American Litter Pick Up, Adopt-A-Creek and the Creek Connections Action Group; along with creekwise education and regional coordination efforts.

Benefits

- Reduces contaminants entering our waterways and groundwater
- Engages and educates the community, and supports watershed stewardship
- Leverages volunteer community resources for efficient use of funds

Key performance indicator

1. Fund Valley Water's creek stewardship program to support volunteer cleanup activities, such as annual National River Cleanup Day, California Coastal Cleanup Day, the Great American Litter Pick Up, and the Adopt-A-Creek Program.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $5.1 million

Estimated total project cost: $9.2 million

What happens to Priority B projects if funding is not available?

Funding for pollution prevention activities and green stormwater infrastructure will not be available. Only activities that fulfill legal and regulatory requirements will be funded.

Priority C

Protect Our Water Supply and Dams from Earthquakes and Other Natural Disasters



The Priority C project helps protect our drinking water supply and water quality infrastructure from natural disasters, such as earthquakes. This priority provides partial funding to retrofit Anderson Dam so that it can safely withstand a large earthquake. Known as the Anderson Dam Seismic Retrofit project, the project would continue to ensure public safety and secure a reliable water supply.

PROJECT C1
ANDERSON DAM SEISMIC RETROFIT

Anderson Reservoir is currently limited in its capacity due to seismic concerns, costing Santa Clara County valuable drinking water resources. This project, which continues the 2012 Safe, Clean Water project, provides a portion of the funds required to help restore the full operating capacity of Anderson Reservoir.

Anderson Dam creates the county's largest surface water reservoir—Anderson Reservoir—which stores local rainfall runoff and imported water from the Central Valley Project. The reservoir is an important water source for drinking water treatment plants and the recharge of the groundwater basin. Besides restoring drinking water supplies and covering the earthquake retrofitting of Anderson Dam to improve reliability and safety, the upgrade also supports compliance with environmental regulations. Valley Water's regular reservoir releases ensure that downstream habitat has healthy flows to sustain wildlife.

A breach of Anderson Dam at full capacity could have catastrophic consequences, including inundation of surrounding land more than 30 miles northwest to San Francisco Bay, and more than 40 miles southeast to Monterey Bay.

Benefits

- Brings the dam into compliance with today's seismic standards
- Increases reliability and safety of our area's largest reservoir by protecting it from earthquakes
- Eliminates operational restrictions issued by the two regulatory agencies—the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources Division of Safety of Dams (DSOD). In February 2020, FERC directed Valley

PROJECT C1: ANDERSON DAM SEISMIC RETROFIT

- Brings the dam into compliance with today's seismic standards
- Increases reliability and safety by protecting the dam from earthquakes
- Enhances fish and wildlife habitat
- Minimizes the risk of uncontrollable releases from the reservoir that could cause downstream flooding



Anderson Dam

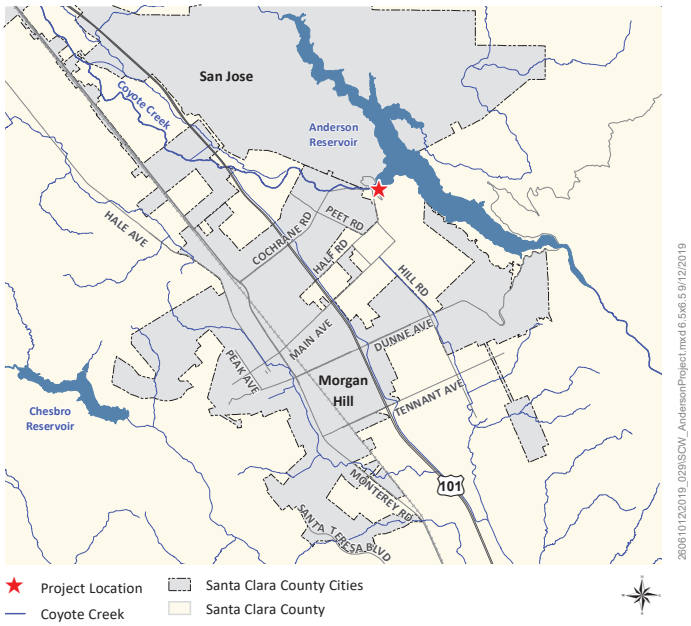
Water to begin safely lowering the reservoir to an elevation of 488 feet (essentially almost emptying the reservoir) beginning October 1, 2020. This project would restore Anderson Reservoir to its full capacity of approximately 90,373 acre-feet of water storage for our current and future water supply

- Ensures compliance with environmental laws and regulations
- Enhances native fish and wildlife habitat
- Minimizes the risk of uncontrollable releases from the reservoir, which could cause downstream flooding

Key performance indicator

1. Provide portion of funds, up to $54.1 million, to help restore full operating reservoir capacity of 90,373 acre-feet.

Geographic area of benefit: Countywide



Estimated funding from Safe, Clean Water Renewal: $54.1 million

Estimated total project cost: $576.3 million

What happens to Priority C projects if funding is not available?

A breach of Anderson Dam at full capacity could have catastrophic consequences, which makes the funding contribution from this program vital to the safety of our county.

Priority D

Restore Wildlife Habitat and Provide Open Space

Priority D projects restore and protect wildlife habitat. Work under this priority includes controlling non-native, invasive plants; replanting native species; and maintaining previously replanted areas. Other projects include removing barriers to fish movement, improving steelhead habitat and stabilizing eroded creek banks. Under this priority, projects supporting riparian planting and invasive plant removal, fish passage and fish habitat improvements would be enhanced with additional funding. To support restoration projects, Valley Water would continue to build and update a comprehensive watershed database that tracks stream ecosystem conditions helping Valley Water and other organizations make informed watershed, asset management and natural resource decisions.

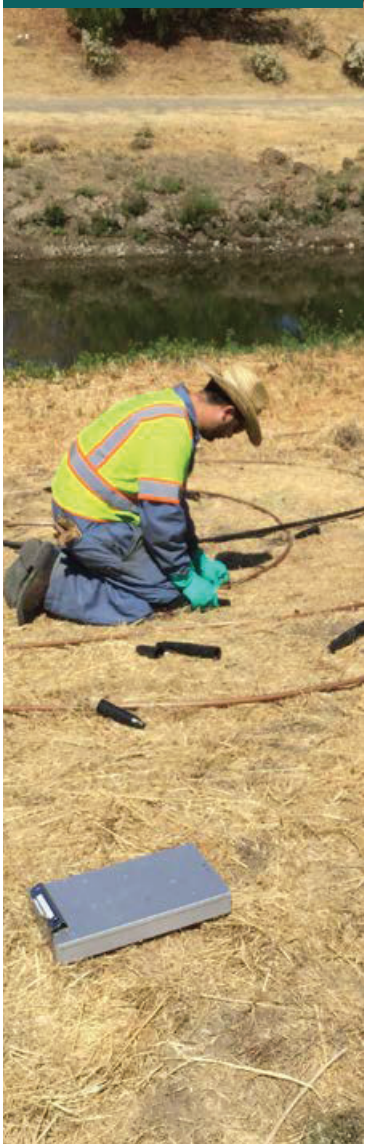
PROJECT D1
MANAGEMENT OF RIPARIAN PLANTING AND INVASIVE PLANT REMOVAL

This project supports Valley Water management of at least 300 acres of existing riparian planting projects and 200 acres of invasive plant removal projects throughout the five (5) watersheds. The project also funds maintenance of future riparian planting and invasive plant removal sites, which are anticipated as part of upcoming environmental mitigation requirements. Funding for this project ensures that all required riparian planting and invasive plant removal projects are maintained as functional habitat that can support wildlife. In addition, this project includes targeted control of especially damaging non-native, invasive plant species such as Arundo donax throughout the county.

Climate change has increased temperatures and lengthened growing seasons, which facilitates the spread of non-native invasive vegetation by allowing it to establish early in spring before native species, thus transforming ecosystems. Management of riparian planting and invasive plant removal helps prevent the spread of non-native species, making the natural habitat less vulnerable and more resilient to climate change. Furthermore, restoring habitats that are damaged during regular operations is an important component of sustainable stewardship to protect nearby natural areas. It helps improve native habitat.

PROJECT D1: MANAGEMENT OF RIPARIAN PLANTING AND INVASIVE PLANT REMOVAL

- Maintains existing revegetated areas
- Maintains areas of invasive plant removal
- Prevents the spread of non-native species
- Improves native habitat



Installing irrigation in Guadalupe River

PROJECT D2: REVITALIZE RIPARIAN, UPLAND AND WETLAND HABITAT

- Improves habitat by planting tidal, riparian and upland plant species
- Increases habitat connectivity for wildlife
- Helps prevent new invasive plants from becoming established



Lower Guadalupe River revitalization

Benefits

- Maintains 300 acres of existing riparian planting sites
- Maintains 200 acres of existing invasive plant management projects
- Allows Valley Water to monitor plant survival and habitat functions
- Complies with environmental laws, which require long-term habitat mitigation for routine stream maintenance, flood protection and water supply projects
- Provides for the maintenance of future riparian planting and invasive plant management sites
- Addresses climate change

Key performance indicators

1. Maintain a minimum of 300 acres of riparian planting projects annually to meet regulatory requirements and conditions.
2. Maintain a minimum of 200 acres of invasive plant management projects annually to meet regulatory requirements and conditions.
3. Remove 25 acres of Arundo donax throughout the county over a 15-year period.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $68.9 million

Estimated total project cost: $118.8 million

PROJECT D2
REVITALIZE RIPARIAN, UPLAND AND WETLAND HABITAT

This project allows Valley Water to revitalize habitat for rare, threatened or endangered species or vegetation types, and create a more contiguous corridor for wildlife, including pollinators. Funding helps to restore degraded habitat by removing invasive plants and/or revegetating with native species. Funding is prioritized for projects that include community partnerships or provide education for nearby landowners and other stakeholder groups on the control of harmful species.

The project will also create an Early Detection and Rapid Response Program to identify and treat small infestations of new weeds before they become established.

Increasing the quality and quantity of native habitat areas and improving the connections between them are important adaptive strategies to support native species as climate conditions change. It increases access to new areas for migration and more room for hiding, hunting, breeding and rearing as needs evolve and increase.

Benefits

- Increases viability of native plant species by reducing competition from non-native, invasive species

- Improves habitat by installing tidal, riparian, and upland plant species or allowing native vegetation to passively regenerate after treatment/removal of invasive species
- Improves ecological function of existing riparian, wetland and potentially upland habitats to support more diverse wildlife species
- Improves patchy wildlife corridors by increasing connectivity with nearby habitat areas
- Increases community awareness about the damaging impact that non-native, invasive plants have on local ecosystems
- Helps to prevent new invasive species from becoming established
- Early Detection Invasive Species Information Sheets will guide staff and public on identification and treatment options, raise public awareness, and help prevent the spread of new noxious weeds

Key performance indicators

1. Revitalize at least 21 acres over a 15-year period through native plant revegetation and/or removal of invasive exotic species.
2. Develop an Early Detection and Rapid Response Program Manual.
3. Identify and treat at least 100 occurrences of emergent invasive species over a 15-year period, as identified through the Early Detection and Rapid Response Program.
4. Develop at least eight (8) information sheets for Early Detection of Invasive Plant Species.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $8.1 million

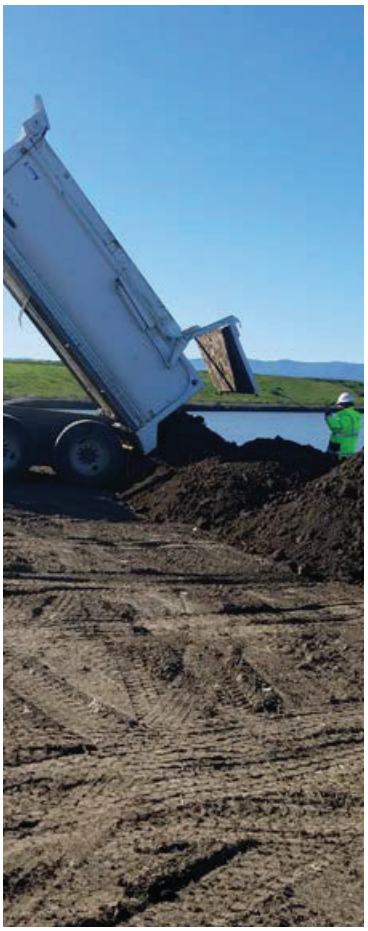
Estimated total project cost: $8.1 million

PROJECT D3
SEDIMENT REUSE TO SUPPORT SHORELINE RESTORATION

This project reuses local sediment removed through Valley Water's Stream Maintenance Program, capital projects and other local sources to create and restore tidal marsh habitat. Sediment may be reused to support the South Bay Salt Pond Restoration project or other environmental enhancement and restoration projects. Valley Water removes sediment from streams to maintain their capacity to carry floodwaters. To secure environmentally appropriate reuse sites, this project continues the existing partnership with the U.S. Fish and Wildlife Service (FWS) and explores partnerships with others. This project also funds site improvements necessary to facilitate sediment delivery to the reuse sites.

PROJECT D3: SEDIMENT REUSE TO SUPPORT SHORELINE RESTORATION

- Accelerates progress of tidal marsh restoration
- Reduces disposal costs by reusing sediment removed from flood channels
- Addresses sea-level rise impacts



Sediment reuse at Pond A8

PROJECT D4: FISH HABITAT AND PASSAGE IMPROVEMENT

- Improves habitat and passage for steelhead and other native fish
- Contributes to required mitigation for reservoir and stream project impacts

Beneficial reuse of sediment has become a key component in tidal marsh restoration around the Bay. As sea levels rise, natural sedimentation and vegetation rates cannot keep up and tidal zones are in danger of being submerged, erasing environmental gains from restoration work. By delivering clean sediment from local creeks that would have naturally flowed into the San Francisco Bay, this project accelerates natural marsh-building processes and helps to keep up with sea-level rise. Activities necessary for sediment reuse may include testing, transport, cover material, and site improvements required for access.

Benefits

- Accelerates progress of important tidal wetland restoration projects
- Reduces disposal costs for sediment that has been removed from local channels
- Reduces disposal of clean fill into local landfills
- Addresses climate change

Key performance indicators

1. Maintain partnership agreements to reuse sediment to improve the success of salt pond and tidal marsh restoration projects and activities.
2. Provide up to $4 million per 15-year period to support activities necessary for sediment reuse.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $4.1 million

Estimated total project cost: $4.1 million

PROJECT D4
FISH HABITAT AND PASSAGE IMPROVEMENT

This project helps restore and maintain healthy fish populations, especially steelhead, by improving fish passage and habitat. Sites may include Alamitos Creek at Almaden Lake and County of Santa Clara-owned Ogier Ponds, where human-made creek alterations disrupt fish migration. Project D4, which includes coordinating and partnering with other external parties, incorporates studies of streams throughout the county to determine what and where habitat improvements will most benefit steelhead. These studies can be used by regional partners to implement complementary habitat enhancements.

Almaden Lake Creek/Lake Separation Project

The project also continues funding to place instream gravel, boulders, large wood, or other features to enhance fish habitat at appropriate locations. By adding natural stream features such as large wood, we can create habitat to provide refuge during fish migration, prolonged drought, or extreme rainfall events. Additionally, habitat restoration can improve ecosystem function and increase resiliency to climate change.

By restoring natural functions, issues such as water quality may be less exacerbated and native species can continue to flourish and adapt.

Benefits

- Improves habitat and passage for steelhead and other native fish within Santa Clara County watersheds
- Contributes to required mitigation for environmental impacts of reservoir and recharge operations and countywide Stream Maintenance Program
- Maintains investment in earlier habitat improvements
- Addresses climate change

Key performance indicators

1. Complete planning and design for one (1) creek/lake separation.
2. Construct one (1) creek/lake separation project in partnership with local agencies.
3. Use $8 million for fish passage improvements by June 30, 2028.
4. Update study of all major steelhead streams in the county to identify priority locations for fish migration barrier removal and installation of large woody debris and gravel as appropriate.
5. Complete five (5) habitat enhancement projects based on studies that identify high priority locations for large wood, boulders, gravel, and/or other habitat enhancement features.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $44.1 million

Estimated total project cost: $51.1 million

PROJECT D5
ECOLOGICAL DATA COLLECTION AND ANALYSIS

This project continues to build and update watershed data to track stream ecosystem conditions, helping Valley Water and other county agencies and organizations make informed watershed, asset management and natural resource decisions. The new and updated information will be used to develop or modernize integrated watershed plans (such as watershed profiles, One Water Plan and Stream Corridor Priority Plans) that identify potential projects, support grant applications, environmental analyses and permits, and are shared with land use agencies, environmental groups, and the public to make efficient and coordinated environmental decisions throughout the county. These data and plans will help integrates and enhances Valley Water's programs, projects, maintenance and stewardship actions through standardized, repeatable and defensible measurements that guide, organize and integrate information on stream and habitat conditions.

PROJECT D5: ECOLOGICAL DATA COLLECTION AND ANALYSIS

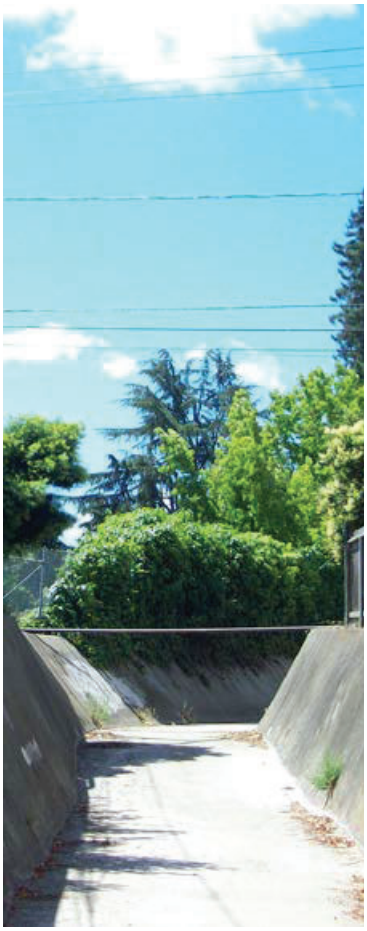
- Provides reliable data on countywide stream conditions and project performance
- Facilitates watershed approach to resource management
- Provides scientific guide for decisions and actions to improve stream conditions



Lead Biologist Unit Manager overlooking Coyote Ridge

PROJECT D6: RESTORATION OF NATURAL CREEK FUNCTIONS

- Improves native aquatic habitat
- Reduces instability and sedimentation in creeks
- Reduces annual maintenance costs for sediment removal



Hale Creek will be the pilot project to restore natural functions and stream stability.

Measuring changes in ecological conditions through time allows Valley Water, resource agencies, land managers and the public to understand and respond to climate change effects and evolving creek and habitat conditions.

Benefits

- Improves natural resource, watershed and asset management decisions
- Provides a systematic, scientific guide for decisions and actions to improve stream conditions
- Supports effective and environmentally sound design options
- Provides reliable data on countywide stream conditions and basis for measuring the success of past mitigation and environmental stewardship project projects
- Facilitates a watershed approach to resource management, permitting and restoration planning
- Addresses climate change

Key performance indicator

1. Reassess and track stream ecological conditions and habitats in each of the county's five (5) watersheds every 15 years.
2. Provide up to $500,000 per 15-year period toward the development and updates of five (5) watershed plans that include identifying priority habitat enhancement opportunities in Santa Clara County.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $7.5 million

Estimated total project cost: $11.0 million

PROJECT D6
RESTORATION OF NATURAL CREEK FUNCTIONS

This project will develop, compile and use local hydrologic and geomorphic data to identify, design and construct projects to restore and improve natural functions and stability of stream channels.

Geomorphically appropriate channels will be more resilient to damage from more intense rainfall patterns caused by climate change.

Benefits

- Uses scientific principles to improve sediment balance and reduce erosion, enhance percolation and reduce instability and sedimentation in creeks

- Can help reduce annual maintenance cost for sediment removal where erosion and incision problems can be addressed
- Improves native aquatic habitat
- Improves the aesthetic value of a stream
- Addresses climate change

Key performance indicators

1. Construct the Hale Creek Enhancement Pilot Project, which includes restoration and stabilization of a 650-foot section of concrete-lined channel on Hale Creek, between Marilyn Drive and North Sunshine Drive on the border of Mountain View and Los Altos.
2. Construct the Bolsa Road Fish Passage Project along 1,700 linear feet of Uvas-Carnadero Creek in unincorporated Santa Clara County, which includes geomorphic design features that will restore stability and stream function.
3. Identify, plan, design, and construct a third geomorphic-designed project to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $14.5 million

Estimated total project cost: $19.6 million

PROJECT D7: PARTNERSHIPS FOR THE CONSERVATION OF HABITAT LANDS

- Protects, enhances and restores natural resources in Santa Clara County
- Contributes to recovery of special status species
- Coordinates regional mitigation and conservation projects



Coyote Ceanothus

PROJECT D7
PARTNERSHIPS FOR THE CONSERVATION OF HABITAT LANDS

Funding from this project helps the community acquire and protect important habitat land to preserve local ecosystems. The project supports implementation of multi-agency agreements, such as the Valley Habitat Plan, that pool mitigation or conservation dollars to protect or restore large areas of habitat land.

Acquiring, restoring, connecting and protecting habitat areas helps native species to adapt to a changing climate. Large, contiguous land patches allow species room to move and adapt, to find cover from the damaging effects of climate change and to reestablish resting and rearing areas.

Benefits

- Protects, enhances and restores natural resources in Santa Clara County
- Contributes to the recovery of special status species
- Coordinates regional mitigation or conservation projects to create larger, less fragmented conservation lands that are more beneficial for wildlife and the environment
- May fulfill a portion of Valley Water's responsibilities to the Valley Habitat Plan
- Addresses climate change

Key performance indicator

1. Provide up to $8 million per 15-year period for the acquisition or enhancement of property for the conservation of habitat lands.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $8.0 million

Estimated total project cost: $8.0 million

What happens to Priority D projects if funding is not available?

Critical mitigation and maintenance work will be severely impacted. Important fish habitat and passage work may not occur and integral environmental studies and analysis will go unfunded.

Priority E

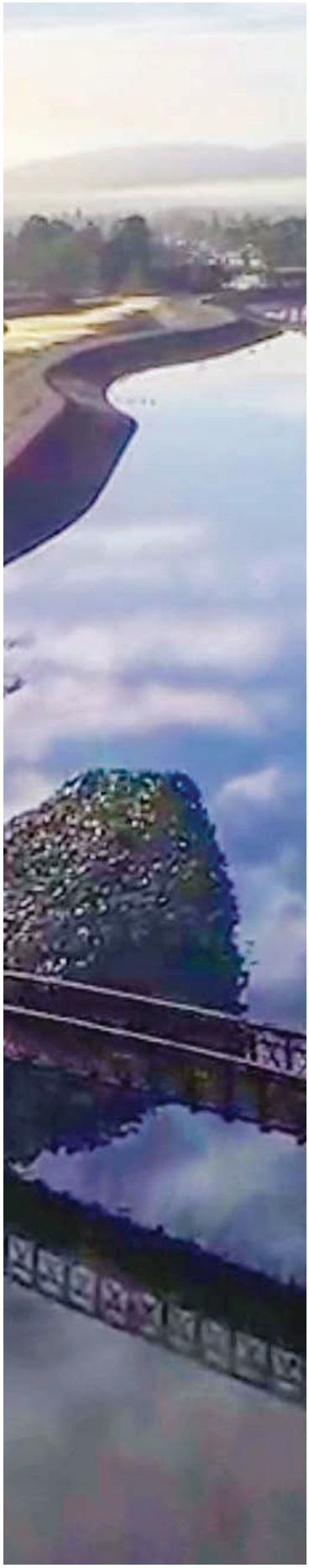
Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways



Priority E focuses on providing flood protection through major capital construction projects. Projects are prioritized to protect the largest number of people, homes and businesses, as well as safeguard the highways, streets, public transportation and business centers that people depend on for their livelihoods. In addition to continuing the existing flood protection projects, some of them with enhanced funding, this priority would now include the Lower Berryessa Creek Flood Protection Project.

Almost all the construction projects under this priority describe a preferred project that relies on state and federal government funding and a local-funding-only project. Should federal funding become scarce, Valley Water would reduce the project scope to the local-funding-only project, as described in the individual project summaries. Whenever possible, Valley Water also leverages funds from state, local municipalities and other stakeholders.

Climate change is a global reality and is expected to result in sea-level rise and more variable weather patterns, leading to potentially bigger and more frequent floods. Valley Water incorporates climate change projections, especially sea-level rise, in design and construction of more resilient flood protection projects that increase the capacity of channels to convey higher storm events without overbanking into local streets, highways and neighborhoods.



Aerial view of Highway 101

PROJECT E1: COYOTE CREEK FLOOD PROTECTION, MONTAGUE EXPRESSWAY TO TULLY ROAD—SAN JOSÉ

- Provides flood protection
- Enhances stream habitat
- Improves water quality
- Increases recreational opportunities



Interim floodwall and embankment along Coyote Creek in the Rock Springs community

PROJECT E1
COYOTE CREEK FLOOD PROTECTION, MONTAGUE EXPRESSWAY TO TULLY ROAD—SAN JOSÉ

This project is to plan, design and construct improvements along approximately nine (9) miles of Coyote Creek, between Montague Expressway and Tully Road, in San José. The primary objective is to provide protection from floods up to the level that occurred on February 21, 2017, equivalent to approximately a 5% flood (20-year event). In December 2019, the Valley Water Board of Directors voted to allocate local funding for construction of the preferred project; however, Valley Water is also exploring additional external funding sources and partnership opportunities.

Since 2017, Valley Water has implemented several short-term interim projects to help reduce the risk of flooding along Coyote Creek. These include the installation of an interim floodwall and embankment along the creek in the Rock Springs community. This structure protects the Rock Springs community from a flood event equivalent to the February 2017 flood. Other interim projects include repairing a 150-foot levee adjacent to the South Bay Mobile Home Park, installing flood gauges on bridges that provide real-time visual information on water levels and removing invasive vegetation from Valley Water and City property in parts of the creek that experienced the most flooding.

Flooding History and Project Background

Flooding has occurred many times within the Coyote Creek Watershed, including along portions of Coyote Creek in 1911, 1917, 1931, 1958, 1969, 1982, 1983, 1997, 1998, and 2017. The largest flow recorded on Coyote Creek was 25,000 cubic feet per second in 1911, prior to construction of the current two (2) water-supply reservoirs in the upper watershed. The worst flooding in the project reach since Anderson Reservoir was constructed in 1950 occurred in February 2017. Coyote Creek overtopped its banks at several locations between Montague Expressway and Tully Road. Businesses and hundreds of homes were inundated by creek waters for many hours. Highway 101 near Watson Park and various local streets were closed due to flooding, and thousands of residents had to be evacuated and sheltered.

Originally, the project reach extended approximately 6.1 miles between Montague Expressway and Highway 280; however, the project reach was extended approximately 2.9 miles upstream to Tully Road in 2017 to include the Rock Springs neighborhood and incorporate the areas impacted by the February 2017 flood event. In addition to the primary objective of reducing flood risk, the project may evaluate opportunities to improve fisheries, stream habitat values, and public access.

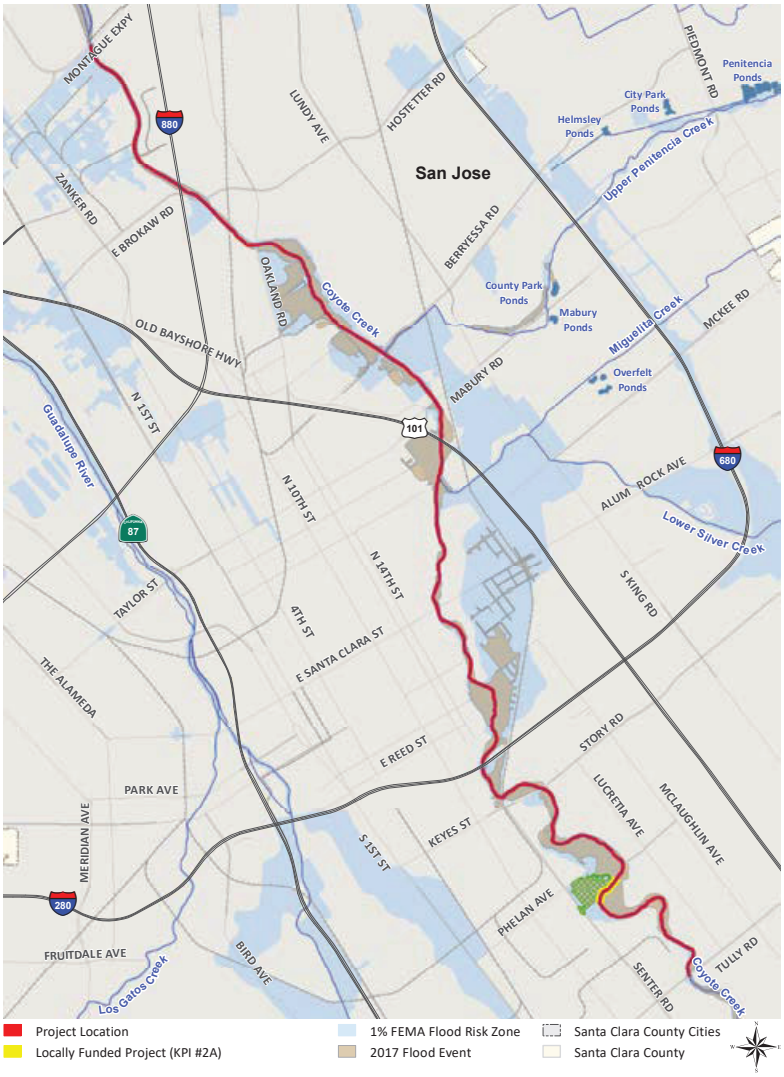
Benefits

- Protects approximately 600 parcels from the level of flooding that occurred on February 21, 2017, approximately a 5% flood
- Improves water quality, enhances stream habitat and increases recreational opportunities
- Provides opportunities to incorporate revegetation and aesthetic elements to the Coyote Creek park chain in the project
- Addresses climate change

Key performance indicator

1. Construct flood protection improvements along Coyote Creek between Montague Expressway and Tully Road to provide protection from floods up to the level that occurred on February 21, 2017, approximately a 5% (20-year) flood event.

Geographic area of benefit: San José



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Estimated funding from Safe, Clean Water Renewal: $41.8 million

Estimated total project cost: $80.8 million

PROJECT E2: SUNNYVALE EAST AND SUNNYVALE WEST CHANNELS FLOOD PROTECTION, SAN FRANCISCO BAY TO INVERNESS WAY AND ALMANOR AVENUE—SUNNYVALE

- Provides flood protection
- Improves stream water quality by reducing erosion



Sunnyvale West Channel from Carl Road looking south to Caribbean Drive

PROJECT E2
SUNNYVALE EAST AND SUNNYVALE WEST CHANNELS FLOOD PROTECTION, SAN FRANCISCO BAY TO INVERNESS WAY AND ALMANOR AVENUE—SUNNYVALE

This project is to upgrade approximately 6.4 miles of the existing Sunnyvale East Channel to provide 1% flood protection (100-year event) to 1,618 parcels and approximately three (3) miles of the existing West Channel to provide 1% flood protection for 47 acres of highly valuable industrial lands, including the Onizuka Air Force Base.

The Sunnyvale East Channel and Sunnyvale West Channel improvement projects have been combined into a single flood protection project with a single Environmental Impact Report (EIR) to reduce construction costs and improve efficiencies. Both projects decrease channel turbidity and sediment by repairing erosion sites, thereby improving water quality and reducing sediment to the San Francisco Bay.

In 2018, Valley Water entered into a Memorandum of Understanding with Google, LLC (Google) to incorporate Google's proposed enhancement effort along 1,100 linear feet of the Sunnyvale West Channel into the project. This portion of the project will also be part of Google's Caribbean Campus Project. Valley Water has completed 100% design and has submitted all required permit applications for the project. Once all permits are received, Valley Water will begin construction.

Flooding History and Project Background

The Sunnyvale East Channel and the Sunnyvale West Channel were constructed in the 1960s to serve as storm drains with approximately 10% flood protection (10-year event). They were constructed in response to flooding caused by a combination of major storm events, land subsidence, and inadequate drainage to south San Francisco Bay. Since construction, the storm drain channels have experienced flooding during major storm events in 1968, 1983, 1986, and 1998.

Benefits

- Provides 1% flood capacity for approximately 6.4 miles of channel along Sunnyvale East and approximately three (3) miles of channel along Sunnyvale West within the City of Sunnyvale, protecting 1,618 properties (Sunnyvale East) and 47 acres (11 properties) of industrial land (Sunnyvale West)
- Improves stream water quality by providing erosion control measures to decrease sediment and turbidity
- Identifies recreational opportunities that can be integrated by the City of Sunnyvale and others as appropriate
- Addresses climate change

Key performance indicator

1. Provide 1% (100-year) flood protection for 1,618 properties and 47 acres (11 parcels) of industrial land, while improving stream water quality and working with other agencies to incorporate recreational opportunities.

Geographic area of benefit: Sunnyvale

Estimated funding from Safe, Clean Water Renewal: $33.0 million

Estimated total project cost: $70.4 million

PROJECT E3
LOWER BERRYESSA FLOOD PROTECTION, INCLUDING TULARCITOS AND UPPER CALERA CREEKS (PHASE 3)—MILPITAS

This project is located in the City of Milpitas and includes Tularcitos Creek and Upper Calera Creek, which are two tributary creeks of Lower Berryessa Creek. Once constructed, this project will provide 1% (100-year event) flood protection to 1,100 parcels affected by Upper Calera Creek from the drop structure upstream of Arizona Avenue upstream to José Higuera Adobe Park, and to an estimated 320 parcels along Tularcitos Creek between its confluence with Berryessa Creek and Interstate 680. Additionally, this project will address inadequate maintenance access along all three creeks, which has made past maintenance more difficult, costly and time-consuming. Design for this project is slated to begin in 2032.

Flooding History and Project Background

Flooding occurred along Berryessa Creek in 1982, 1983 and 1997. While no reports of flooding along Calera Creek or Tularcitos Creek have been discovered, the Federal Emergency Management Agency and Valley Water 1% flood maps indicate potential flooding along portions of Lower Berryessa Creek and Calera Creek. Flows in Lower Berryessa Creek have a backwater effect on most of Tularcitos Creek. Tularcitos Creek cannot contain design flows due to both this backwater effect and inadequate channel capacity. Also, though the existing levees on both sides of Tularcitos Creek are structurally stable, they are constructed with highly plastic clay that shrinks and swells, causing erosion and cracking along portions of the levees. Additionally, Upper Calera Creek cannot contain design flows due to inadequate channel capacity.

Benefits

- Provides 1% flood protection for an estimated 1,420 parcels along Upper Calera and Tularcitos creeks
- Improves access for long-term channel maintenance for both creeks
- Incorporates opportunities to integrate levees with the City of Milpitas trail system
- Identifies opportunities for stream habitat enhancement and/or restoration
- Addresses climate change

Key performance indicator

1. With local funding only: Complete the design phase of the 1% (100-year) flood protection project to protect an estimated 1,420 parcels.

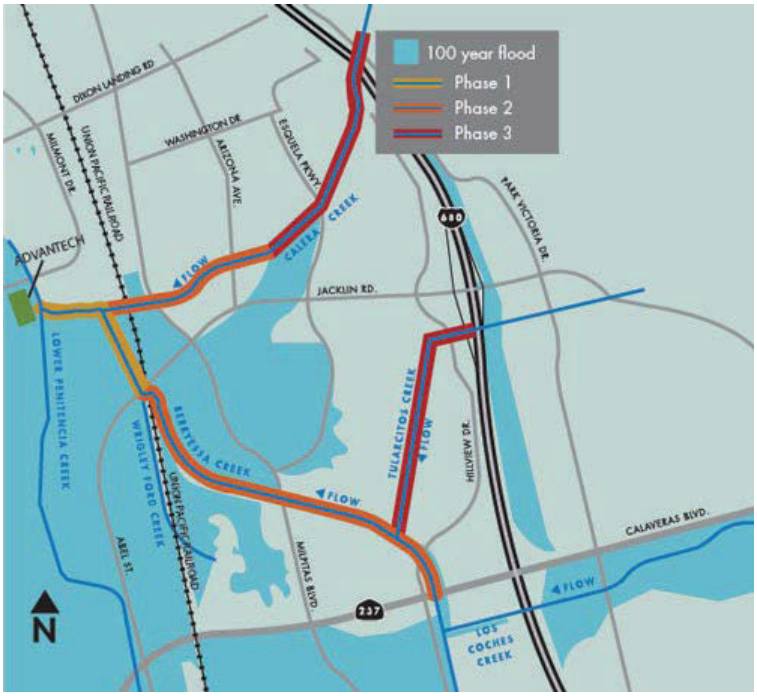
PROJECT E3: LOWER BERRYESSA FLOOD PROTECTION, INCLUDING TULARCITOS AND UPPER CALERA CREEKS (PHASE 3)—MILPITAS

- Provides flood protection along Upper Calera and Tularcitos creeks
- Improves stream water quality by reducing erosion



Channel near Interstate 680

Geographic area of benefit: Milpitas



Estimated funding from Safe, Clean Water Renewal: $8.2 million

Estimated total project cost: $71.2 million

PROJECT E4
UPPER PENITENCIA CREEK FLOOD PROTECTION, COYOTE CREEK TO DOREL DRIVE—SAN JOSÉ

Preferred project: A federal-state-local partnership

This project continues a partnership with the U.S. Army Corps of Engineers (USACE), to plan, design and construct improvements along 4.2 miles of Upper Penitencia Creek from the confluence with Coyote Creek to Dorel Drive. Part of the project will protect the area around the Bay Area Rapid Transit's (BART) Berryessa station near King Road, which would otherwise be subject to flooding.

In addition to providing flood protection, this multi-objective project will provide ecological restoration and recreation benefits while preserving the water supply. The natural creek channel will be preserved while adjacent existing open space and parkland will remain as recreational areas, only rarely taking the role as a temporary floodplain so that floodwaters do not enter surrounding neighborhoods and commercial areas. Proposed construction measures may include modified floodplains, limited levees/ floodwalls, a bypass channel, and fish passage improvements.

Local-funding-only project

The original local-funding-only project was to acquire all necessary rights-of-way and construct a 1% (100-year event) flood protection project from Coyote Creek confluence to King Road, which would have protected 450 parcels. In December 2019, the Valley Water Board directed staff to use the available local funding to complete the design and

construction of the locally funded project as well as build the reaches of the preferred project that can be constructed with the available funding. This approach extends the local-funding-only project from King Road to Capital Avenue and provides 1% flood protection for an additional 800 parcels. As a result, the new local-funding-only project would be to construct flood improvements along Upper Penitencia Creek from the confluence of Coyote Creek to Capital Avenue to increase the 1% flood protection provided with local available dollars to 1,250 parcels, including the new Berryessa BART station.

Flooding History and Project Background

Upper Penitencia is a major tributary of Coyote Creek, flowing westerly from Alum Rock Park through the residential neighborhoods of Berryessa and Alum Rock in San José. Approximately 8,000 homes, schools, businesses, including many high-tech and commercial industries supporting the greater Silicon Valley, and the new Berryessa BART station are in this floodplain.

With the capacity to carry less than a 10% flood (10-year event), Upper Penitencia Creek has spilled its banks at least seven (7) times since Valley Water began preparing flood reports in 1967. Damaging flood events occurred in 1978, 1980, 1982, 1983, 1986, 1995, and 1998, impacting many homes, businesses and surface streets.

Benefits

- Preferred project provides up to 1% flood protection to approximately 8,000 homes, schools and businesses.
- Local-funding-only project provides 1% flood protection to 1,250 parcels, including the new Berryessa BART station.
- Restores/enhances ecological and riparian habitat
- Reduces sedimentation and maintenance requirements
- Improves water quality in Upper Penitencia and Coyote creeks
- Provides opportunities for recreation improvements consistent with the City of San José and Santa Clara County Park master plans
- Addresses climate change

Key performance indicator

1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 8,000 parcels.
2. With local funding only: Construct a 1% (100-year) flood protection project from Coyote Creek confluence to Capital Avenue to provide 1% (100-year) flood protection to 1,250 parcels, including the new Berryessa BART station.

Geographic area of benefit: San José

Estimated funding from Safe, Clean Water Renewal: $20.4 million

Estimated total project cost: $67.0 million

PROJECT E4: UPPER PENITENCIA CREEK FLOOD PROTECTION, COYOTE CREEK TO DOREL DRIVE—SAN JOSÉ

- Provides flood protection
- Restores and enhances riparian habitat
- Improves stream water quality



Upper Penintencia along Commodore Park

PROJECT E5: SAN FRANCISQUITO CREEK FLOOD PROTECTION, SAN FRANCISCO BAY TO UPSTREAM OF HIGHWAY 101—PALO ALTO

- Provides flood protection
- Reduces bank erosion and sedimentation
- Enhances recreational opportunities for the community



High flows under the Pope/Chaucer Street Bridge

PROJECT E5
SAN FRANCISQUITO CREEK FLOOD PROTECTION, SAN FRANCISCO BAY TO UPSTREAM OF HIGHWAY 101—PALO ALTO

This project is sponsored by the San Francisquito Creek Joint Powers Authority (SFCJPA), of which Valley Water is a member agency, in partnership with the U.S. Army Corps of Engineers (USACE).

Preferred project: A federal-state-local partnership

The project is to construct improvements along San Francisquito Creek from San Francisco Bay to Middlefield Road and additional detention of floodwaters upstream of Highway 280 to provide 1% (100-year event) flood protection, ecosystem protection and recreational benefits to surrounding communities.

Local-state-funding-only partnership

Highway 101 to Pope-Chaucer Bridge

This stretch of the project will remedy channel constrictions and replace bridges at Newell Road and Pope/Chaucer streets to allow the channel to contain floodwaters of approximately 7,500 cubic feet per second, equivalent to approximately a 1.4% flood event (70-year event). Allowing this level of water to flow through the channel will protect approximately 3,000 parcels in Palo Alto from a flood event close to the February 1998 flood, the largest on record. Currently the channel can only convey approximately a 7% flood event (approximately a 15-year event).

Newell Road Bridge

The Newell Road bridge replacement, unlike the rest of the project elements in this stretch, is sponsored by the City of Palo Alto, which has applied for funding through Caltrans' Highway Bridge Program (HBP). The project has been programmed by Caltrans to fund approximately 89% of the total cost for replacing the Newell Road bridge, while the local match funds, approximately 11% of the total cost, will be funded by Valley Water through the Safe, Clean Water Program renewal. The City of East Palo Alto and the SFCJPA continue to provide input on the Newell Road bridge replacement.

The SFCJPA continues to pursue partnerships with federal, state and local agencies for additional construction funding.

In 2019, Valley Water completed the construction of the San Francisco Bay to Highway 101 reach of the project to provide 1% flood protection and ecosystem benefits to the neighboring communities. Major improvements included construction of approximately 4,000 feet of floodwall and creating a significantly wider creek marsh plain. Therefore, completion of this stretch protects approximately 3,000 parcels in Palo Alto from a flood event close to the February 1998 flood, the largest on record.

Flooding History and Project Background

San Francisquito Creek is one of the last continuous riparian corridors on the San Francisco Peninsula, and is also home to one of the few remaining viable steelhead trout runs. The creek can cause severe flood damage with very little warning and has overflowed seven (7) times since 1910.

During the February 1998 El Niño event, record flooding caused an estimated $28 million in damages in Palo Alto, East Palo Alto and Menlo Park. More than 1,100 homes were flooded in Palo Alto, and Highway 101 was closed, as were numerous other roadways. The largest flood on record prior to 1998 occurred in December of 1955 when the creek overtopped its banks in several locations, inundating about 1,200 acres of commercial and residential property. Damages were estimated at nearly $2 million in 1956 dollars. Total damages from a 1% flood event are estimated at $300 million in Santa Clara and San Mateo counties, as calculated by the USACE in 2011.

Benefits

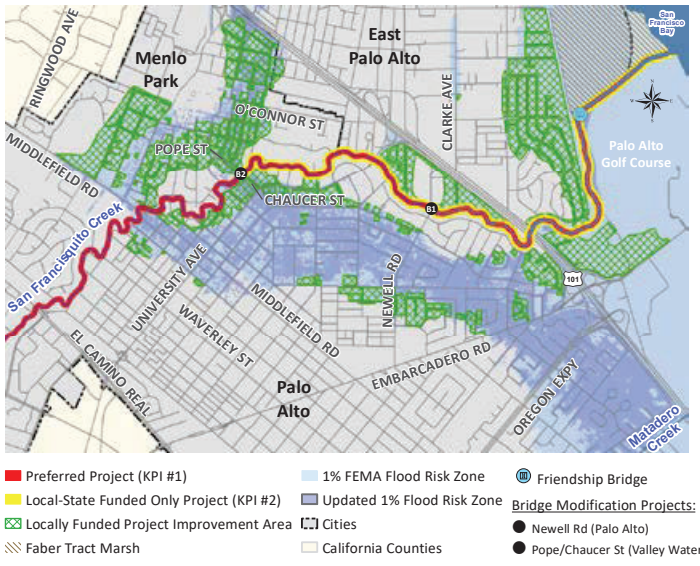
- Provides 1% flood protection to approximately 3,000 homes and businesses in Palo Alto
- Local-state-funding-only project provides approximately 1.4% (70-year event) flood protection for approximately 3,000 homes and businesses in Palo Alto
- Reduces bank erosion and sedimentation-related impacts along San Francisquito Creek
- Provides new or improved habitats for endangered species
- Improves water quality
- Enhances recreational opportunities for the community
- Leverages dollars via cost-shares and grants from the state Department of Water Resources and the California Department of Transportation
- Addresses climate change

Key performance indicators

1. Preferred project with federal, state and local funding: Protect more than 3,000 parcels by providing 1% (100-year) flood protection.

2. With state and local funding only: Protect approximately 3,000 parcels by providing 1% (100-year) flood protection downstream of Highway 101, and approximately 1.4% (70-year) protection upstream of Highway 101.

Geographic area of benefit: Palo Alto



Estimated funding from Safe, Clean Water Renewal:
$31.5 million*

Estimated total project cost:
$89.3 million

* In conjunction with the San Francisquito Creek Joint Powers Authority, Valley Water is seeking $20 million from partnership contributions and/or Continuing Authorities Program Section 205 funding from the U.S. Army Corps of Engineers to help mitigate project costs shown, which would otherwise be funded from program reserves.

PROJECT E6: UPPER LLAGAS CREEK FLOOD PROTECTION, BUENA VISTA AVENUE TO LLAGAS ROAD—MORGAN HILL, SAN MARTIN, GILROY

- Provides flood protection
- Improves stream habitat and fisheries
- Creates additional wetland habitat



Lake Silveira

PROJECT E6
UPPER LLAGAS CREEK FLOOD PROTECTION, BUENA VISTA AVENUE TO LLAGAS ROAD—MORGAN HILL, SAN MARTIN, GILROY

Preferred project: A federal-state-local partnership

This project continues a partnership with the U.S. Army Corps of Engineers (USACE) and the State of California to plan, design and construct improvements along 13.9 miles of channel. The project extends from Buena Vista Avenue to Llagas Road and includes West Little Llagas Creek in downtown Morgan Hill. The federally authorized preferred project protects the urban area of Morgan Hill from a 1% flood (100-year event) and reduces the frequency of flooding in surrounding areas. Construction includes channel modifications and replacement of road crossings. Valley Water continues to work with Congress to aggressively pursue federal funds to bring this project to full fruition.

Local-funding-only project

Construct flood protection improvements along Llagas Creek from Buena Vista Avenue to Highway 101 in San Martin (Reaches 4 and 5 (portion)), Monterey Road to Watsonville Road in Morgan Hill (Reach 7a), approximately W. Dunne Avenue to W. Main Avenue (a portion of Reach 8), and onsite compensatory mitigation at Lake Silveira.

In September 2019, Valley Water began construction on the locally funded Reaches 4, 7a, a portion of Reach 5 and Lake Silveira, which is expected to be completed in 2022. Construction of the approximately 2,300 linear feet of a horseshoe-shaped underground tunnel and approximately 1,600 linear feet of twin reinforced concrete box culverts upstream and downstream of the tunnel to carry high water flows is scheduled to begin in November 2020. Construction is expected to take 2.5 years.

Flooding History and Project Background

The area sustained damage in 1937, 1955, 1958, 1962, 1963, 1969, 1982, 1986, 1996, 1997, 1998, 2002, 2004, 2008, 2009, 2011 and 2017. In 2009, many businesses and residences in downtown Morgan Hill were flooded under 1 foot of water.

Benefits

- Provides 1% flood capacity for four (4) miles along West Little Llagas Creek within downtown Morgan Hill, protecting approximately 1,100 homes and 500 businesses
- Provides 10% (10-year event) flood protection to approximately 1,300 agricultural acres in Morgan Hill, Gilroy and San Martin
- Locally funded project provides improved flood protection for a limited number of homes and businesses in Morgan Hill
- Improves stream habitat and fisheries
- Creates additional wetlands
- Improves stream water quality

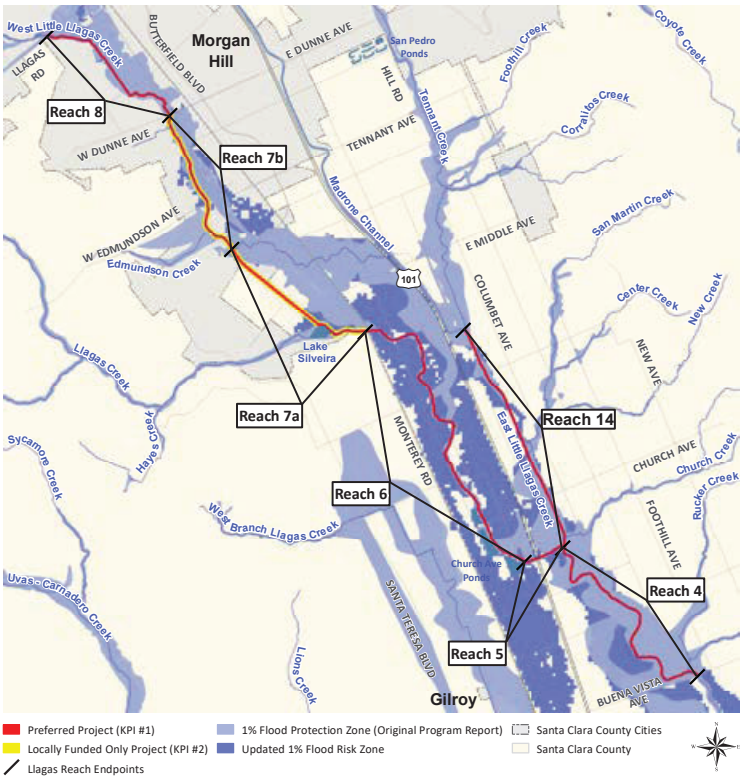
- Identifies opportunities to integrate recreation improvements with the City of Morgan Hill and others as appropriate
- Addresses climate change

Key performance indicators

1. Preferred project with federal and local funding: Plan, design and construct flood protection improvements along 13.9 miles of Upper Llagas Creek from Buena Vista Avenue to Llagas Road to provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat.

2. With local funding only: Construct flood protection improvements along Llagas Creek from Buena Vista Avenue to Highway 101 in San Martin (Reaches 4 and 5 (portion)), Monterey Road to Watsonville Road in Morgan Hill (Reach 7a), approximately W. Dunne Avenue to W. Main Avenue (portion of Reach 8), and onsite compensatory mitigation at Lake Silveira.

Geographic area of benefit: Morgan Hill, San Martin and Gilroy



Estimated funding from Safe, Clean Water Renewal: $46.3 million

Estimated total project cost: $285.0 million

PROJECT E7: SAN FRANCISCO BAY SHORELINE PROTECTION—MILPITAS, MOUNTAIN VIEW, PALO ALTO, SAN JOSÉ, SANTA CLARA, AND SUNNYVALE

- Provides flood protection from coastal flooding and sea-level rise
- Restores tidal marsh habitat
- Provides educational opportunities



Shoreline Phase 1 levee

PROJECT E7
SAN FRANCISCO BAY SHORELINE PROTECTION—MILPITAS, MOUNTAIN VIEW, PALO ALTO, SAN JOSÉ, SANTA CLARA AND SUNNYVALE

This project is a partnership with the California State Coastal Conservancy, the U.S. Army Corps of Engineers (USACE) and regional stakeholders to provide tidal flood protection, restore and enhance tidal marsh and related habitats, and provide recreational and public access opportunities along Santa Clara County's shoreline.

This project relies on federal participation from the USACE to review and approve the plans. Without federal participation, Valley Water cannot implement planning, design and construction on our own due to limited available funding. The proposed Safe, Clean Water funding provides Valley Water's cost share to complete the planning study, design and construction for Economic Impact Areas (EIAs) 1-4, and provides Valley Water's cost share to complete the planning study and design for EIAs 5-10 .

The 2012 Safe, Clean Water Program has already provided $15 million as a portion of Valley Water's local share of funding for flood protection improvements in Economic Impact Area (EIA) 11, which is the urban area of North San José and the community of Alviso. Once completed, EIA 11 will provide flood protection to more than 1,000 residential structures and 100 non-residential structures, and allow for the restoration of 2,900 acres of tidal marsh and related habitats.

The project will provide coastal flood protection from a rising sea level, and will restore and enhance tidal marsh by using a combination of flood protection levees, wetlands and transitional zone habitats also known as ecotones. Ecotones will provide an additional protective buffer for the levee and allow marsh habitat to migrate upslope as the sea level rises. This approach of using natural infrastructure will help develop a resilient and adaptable flood protection system that can evolve in the future.

Flooding History and Project Background

This project stems from the 2003 acquisition of thousands of acres of former South Bay salt production ponds, purchased for wetland restoration with combined public and private funding. The South Bay Shoreline Protection Project is an important component of the South Bay Salt Ponds Restoration Project, a large, multi-agency effort to restore 15,100 acres of tidal wetlands near San José, Mountain View and East Palo Alto/Menlo Park Baylands. Without incorporating flood protection measures along the inboard side of the former salt ponds, proposed wetland restoration would be likely to increase coastal flood risks to the shoreline areas. This project would construct flood protection levees to protect Silicon Valley's "Golden Triangle," bounded by Highway 101, State Route 237 and Interstate 880. Multiple flood events since the mid-1990s have damaged business operations in this area, which is home to major high-tech corporations including Intel, Google, Yahoo, Cisco and others. The project would also protect low-lying communities, as well as important infrastructure such as airports and sewage treatment plants.

The existing multi-agency partnerships for the San Francisco Bay Shoreline Study and the South Bay Salt Ponds Restoration project will continue to ensure all the goals for both these projects are achieved.

Benefits

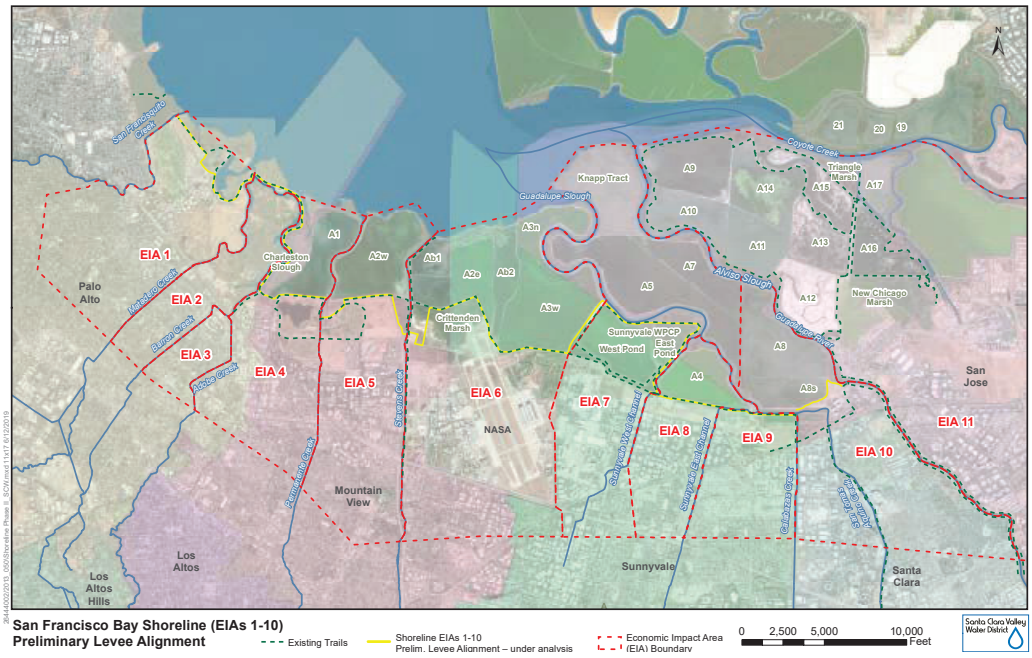
- Provides planning and design to protect nearly 4,700 acres and more than 5,000 structures, including roads, highways, parks, airports and sewage treatment plants in Santa Clara County
- Allows for restoration of tidal marsh habitat for endangered wildlife such as the salt marsh harvest mouse and Ridgway's rail; rich feeding grounds for shorebirds; and nursery areas for young fish such as leopard sharks and steelhead
- Provides educational, recreational and public access opportunities
- Protects more than 4,300 structures (EIAs 1-4)
- Allows for the restoration of 400 acres of tidal marsh and related habitats (EIAs 1-4)
- Addresses climate change

Key performance indicators

1. Provide a portion of the local share of funding for planning, design and construction phases for the Santa Clara County shoreline area, EIAs 1-4.

2. Provide a portion of the local share of funding for planning and design phases for the Santa Clara County shoreline area, EIAs 5-9.

Geographic area of benefit: Milpitas, Mountain View, Palo Alto, San José, Santa Clara and Sunnyvale



Estimated funding from Safe, Clean Water Renewal: $46.0 million

Estimated total project cost: $400.0 million

PROJECT E8: UPPER GUADALUPE FLOOD PROTECTION, HIGHWAY 280 TO BLOSSOM HILL ROAD—SAN JOSÉ

- Provides flood protection
- Improves stream habitat values and fisheries
- Allows for creekside trail access



Upper Guadalupe River Reach 10B

PROJECT E8
UPPER GUADALUPE FLOOD PROTECTION, HIGHWAY 280 TO BLOSSOM HILL ROAD—SAN JOSÉ

Preferred project: A federal-state-local partnership

This federally authorized project continues a project in partnership with the U.S. Army Corps of Engineers (USACE) to plan, design and construct improvements along 5.5 miles of the channel extending from Interstate 280 to Blossom Hill Road. Improvements include channel widening, construction of floodwalls and levees, replacement of road crossings and planting of streamside vegetation. Reducing flood frequency and bank erosion will improve water quality, while planned mitigation measures will give fish access to an additional 12 miles of habitat within and upstream of the project reach.

USACE has initiated a General Re-evaluation Report (GRR) of the preferred project, which is anticipated to be completed by October 2023. The scope of the project may change as a result of the GRR findings.

Local-funding-only project

The locally funded project entails constructing flood protection improvements along 4,100 feet of Guadalupe River between the Southern Pacific Railroad (SPRR) crossing, downstream of Willow Street, to the Union Pacific Railroad (UPRR) crossing, downstream of Padres Drive (Reach 7). It also includes completing a gravel augmentation project along approximately 800 linear feet of the Upper Guadalupe River in San José, from approximately the Union Pacific Railroad Bridge to West Virginia Street Bridge to improve aquatic habitat for migrating steelhead and channel stability. Flood damage will be reduced through the local-funding-only project. However, protection from the 1% (100-year event) flood is not provided without completion of the entire Upper Guadalupe River Flood Protection Project.

Mitigation elements of the project, namely Reach 10B (from Curtner Avenue to Almaden Expressway) and Reach 12 (from Brahnam Lane to Blossom Hill Road), were completed in 2015 in partnerships with USACE. Construction on the gravel augmentation project is scheduled to begin in August 2021.

Flooding History and Project Background

Damaging flood events occurred in 1982, 1983, 1986, 1995 and 1998. Severe flooding in 1995 damaged more than 150 homes in the Gardner, Willow Glen, and South San José residential districts, and shut down Highway 87 and the parallel light rail line – both major commuter thoroughfares. Freeway and light rail flooding occurred again in 1998.

Benefits

- Preferred project will construct 1% flood conveyance capacity for 5.5 miles of channel in San José, protecting approximately 6,280 homes, 320 businesses and 10 schools/ institutions
- Local funding only constructs improvements to 4,100 linear feet of Guadalupe River between the Southern Pacific Railroad (SPRR) crossing, downstream of Willow Street, to the Union Pacific Railroad (UPRR) crossing downstream of Padres Drive to convey 1% flow
- Improves stream habitat values and fisheries
- Improves stream water quality

- Allows for creekside trail access
- Addresses climate change

Key performance indicators

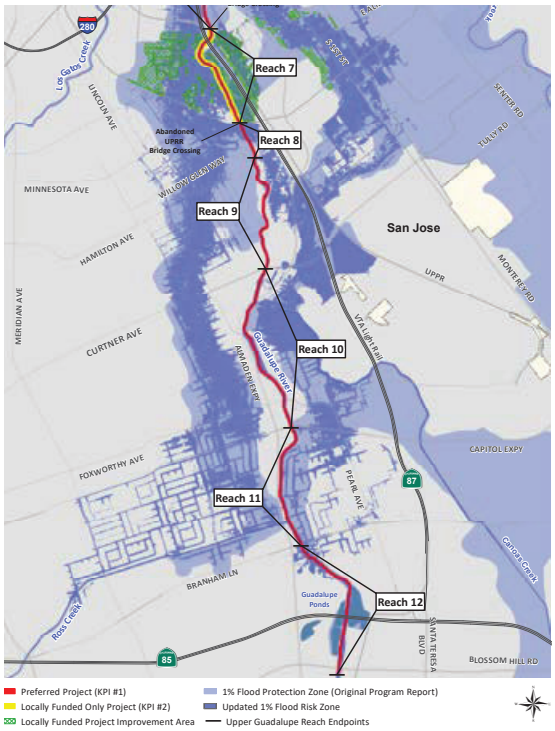
1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 6,280 homes, 320 businesses and 10 schools and institutions.

2. With local funding only: Construct flood protection improvements along 4,100 feet of Guadalupe River between the Southern Pacific Railroad (SPRR) crossing, downstream of Willow Street, to the Union Pacific Railroad (UPRR) crossing, downstream of Padres Drive, and provide gravel augmentation along approximately 800 linear feet of the Upper Guadalupe River in San José, from approximately the Union Pacific Railroad Bridge to West Virginia Street Bridge to improve aquatic habitat for migrating steelhead and channel stability.

Geographic area of benefit: San José

Estimated funding from Safe, Clean Water Renewal: $35.8 million

Estimated total project cost: $494.0 million



What happens to Priority E projects if funding is not available?

Over the years, Santa Clara County has experienced severe flooding. These projects are being designed and constructed to protect our county's most at-risk communities. Without this funding, the majority of these projects may be significantly delayed, prolonging the risk to the community.

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Priority F

Support Public Health and Public Safety for Our Community

With the advent of the COVID-19 pandemic that drastically altered our worldview, the critical need for safe, clean water supplies and essential water infrastructure, particularly during emergencies, has come into sharper focus. This newly proposed priority pulls together multi-benefit projects that were previously placed under other priorities in the 2012 Safe, Clean Water Program and groups them based on their common benefit of supporting public health and public safety along our waterways and critical infrastructure.

This priority would include enhanced funding to support public safety by partnering with local municipalities on services related to encampment cleanups; reducing trash and other pollutants from entering waterways from encampments to support public health; and ongoing vegetation control and sediment removal activities to maintain conveyance capacity of flood protection projects. It would also provide additional funding for grants and partnerships for local agencies, organizations and individuals for water conservation, pollution prevention, creek cleanups and education, wildlife habitat and access to trails and open space.

Additionally, it would include two newly proposed efforts: a project to fund public art to beautify Valley Water property and infrastructure to deter graffiti and litter, and a long-term effort to ensure that existing flood protection infrastructure continues to function sustainably for continued public safety. Other projects would include vegetation management for access and fire safety, removing flood-inducing blockages and improving coordination and communication in flood emergencies.



Stream maintenance in Coyote Creek

PROJECT F1: VEGETATION CONTROL AND SEDIMENT REMOVAL FOR CAPACITY

- Ensures existing flood protection channels function as planned
- Improves and protects water quality



Los Coches Creek

PROJECT F1
VEGETATION CONTROL AND SEDIMENT REMOVAL FOR CAPACITY

This project supports Valley Water's ongoing vegetation control and sediment removal activities that reduce flood risk by maintaining the design conveyance capacity of flood protection projects. The project includes controlling in-stream vegetation and tree growth and removing sediment at appropriate intervals. Before carrying out in-stream maintenance, Valley Water's personnel perform biological pre-construction surveys to minimize environmental impacts. This project also helps fund future maintenance of flood protection projects completed under the Safe, Clean Water Program.

This project comprises two (2) sub-projects that support Valley Water's ongoing vegetation control and sediment removal activities. These sub-projects are:

F1.1 Vegetation Control for Capacity

F1.2 Sediment Removal for Capacity

Benefits

- Ensures that existing flood protection projects continue to provide flood protection
- Improves water quality

Key performance indicator

1. Maintain completed flood protection projects for flow conveyance.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $114.1 million

Estimated total project cost: $213.1 million

PROJECT F2
EMERGENCY RESPONSE PLANNING AND PREPAREDNESS

This project enables Valley Water to work with local municipalities to clearly delineate and communicate roles and responsibilities for floodplain management and flood emergency management. The resulting plans will also strengthen response capabilities for mutual assistance during other types of public health and safety emergencies or natural disasters. The project supports Valley Water's countywide emergency response, preparedness and mitigation activities, develops communication processes and disseminates web-based flood forecasting information developed under Project F7: Emergency Response Upgrades. Valley Water will also assist collaboratoring agencies in developing formal, site-specific flood-fighting strategies and will coordinate outreach throughout the county so that the public receives uniform warning messages during a flood emergency.

Benefits

- Reduces flood damage
- Improves flood preparedness
- Provides effective coordinated response to disaster-related emergencies
- Improves community awareness about disaster-related risks

Key performance indicators

1. Coordinate with local municipalities to merge Valley Water-endorsed flood emergency processes with their own emergency response plans and processes.
2. Complete five (5) flood management plans/procedures per 5-year period, selected by risk priorities.
3. Train Valley Water staff and partner municipalities annually on disaster procedures via drills and exercises before testing the plans and procedures.
4. Test flood management plans/procedures annually to ensure effectiveness.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $7.2 million

Estimated total project cost: $7.2 million

PROJECT F2: EMERGENCY RESPONSE PLANNING AND PREPAREDNESS

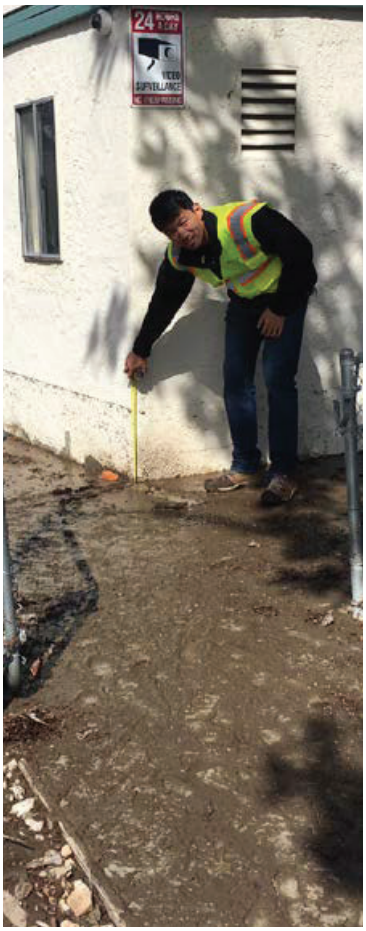
- Improves flood preparedness
- Reduces flood damages
- Provides effective coordinated response to disaster-related emergencies



Emergency response planning

PROJECT F3: FLOOD RISK ASSESSMENT STUDIES

- Provides more accurate mapping of areas at risk of flooding
- Identifies locations in need of preventative maintenance to prevent creek deterioration
- Supports communication with partner agencies on evolving flood risks



Measuring high-water marks in San José after the Coyote Creek flood of 2017

PROJECT F3
FLOOD RISK ASSESSMENT STUDIES

This project is to enable Valley Water scientists to update custom software models of local creeks for the most current and accurate understanding of potential flood risks in high priority flood-prone areas and then develop options for managing those risks. Existing models will be verified, updated and recalibrated as conditions change. Updating our knowledge-base will lead to more effective creek management and maintenance. Valley Water will also convey this information to the community and partner cities.

When creek conditions necessitate rehabilitation to preserve flood protection, this project also funds preliminary engineering studies to isolate problem areas and explore potential solutions. Current engineering studies to be completed are:

- Calera Creek near Milpitas High School to Interstate 680 in Milpitas, which will feed into the design of Project E3: Lower Berryessa Flood Protection
- Tributaries to Lower Silver Creek (Ruby, Norwood, Quimby and Fowler creeks) in San José
- Ross Creek in San José, from Guadalupe River to Blossom Hill Road

As of June 30, 2019, Valley Water had completed four (4) engineering studies under this project. These were on Coyote Creek (Bay to Anderson Dam, including Rock Springs Neighborhood); Adobe and Barron creeks tidal flood protection (Highway 101 to Middlefield Road in Palo Alto); and Alamitos Creek (upstream of Almaden Lake) in San José. The Coyote Creek study completed under this project was utilized to develop the short-term interim projects that Valley Water built to help reduce the risk of flooding along Coyote Creek (See Project E1 - Coyote Creek Flood Protection Project). These include the installation of an interim floodwall and embankment along the creek to protect the Rock Springs community from a flood event equivalent to the February 2017 flood. Valley Water also updated the Alamitos Creek 2-D hydraulic (HEC-RAS) model of the 1% (100-year event) floodplain and shared the information with the City of San José.

Revising flood models on a regular basis enables Valley Water to keep pace with changes in rainfall patterns and intensity as our climate changes. An up-to-date understanding of flood risks allows us to work toward preventing future flooding.

Benefits

- Provides more current and accurate mapping of areas at risk of flooding
- Provides the technical basis for developing future flood protection plans, and for potential funding partnerships
- Identifies, in a timely manner, the needs to prevent creek deterioration
- Identifies the need for flood mitigation or creek rehabilitation projects
- Facilitates communication with partner cities on evolving flood risks and possible solutions
- Addresses climate change

Key performance indicators

1. Complete engineering studies on three (3) creek reaches to address 1% (100-year) flood risk.

2. Annually, update floodplain maps on a minimum of three (3) creek reaches in accordance with new FEMA standards.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $21.9 million

Estimated total project cost: $21.9 million

PROJECT F4:
VEGETATION MANAGEMENT FOR ACCESS AND FIRE SAFETY

- Provides safe access for maintenance of creek channels
- Reduces fire risk along creek channels

PROJECT F4
VEGETATION MANAGEMENT FOR ACCESS AND FIRE SAFETY

This project supports Valley Water's ongoing vegetation management activities that reduce fire risk by maintaining creekside lands. These activities also ensure access for maintenance and emergency personnel and equipment.

The project includes vegetation management activities such as weed abatement, goat grazing, herbicide application and pruning to provide access and reduce fire risk. Before carrying out maintenance, Valley Water's personnel perform biological pre-construction surveys to minimize environmental impacts. Allocations for Project F4 also help fund future maintenance access of flood protection projects completed under the Safe, Clean Water Program.

Fire risk reduction will become a higher priority as the climate changes. This project will allow Valley Water to adapt to those changes.

Benefits

- Provides safe access for maintenance of creek channels
- Reduces fire risk along creek channels
- Addresses climate change by preparing for increased fire risk through vegetation management

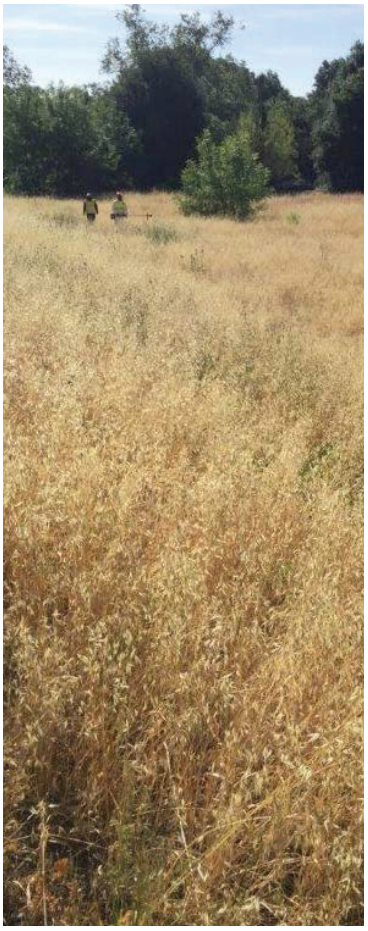
Key performance indicator

1. Provide vegetation management for access and fire risk reduction on an average of 495 acres per year, totaling 7,425 acres along levee, property lines and maintenance roads over a 15-year period.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $12.0 million

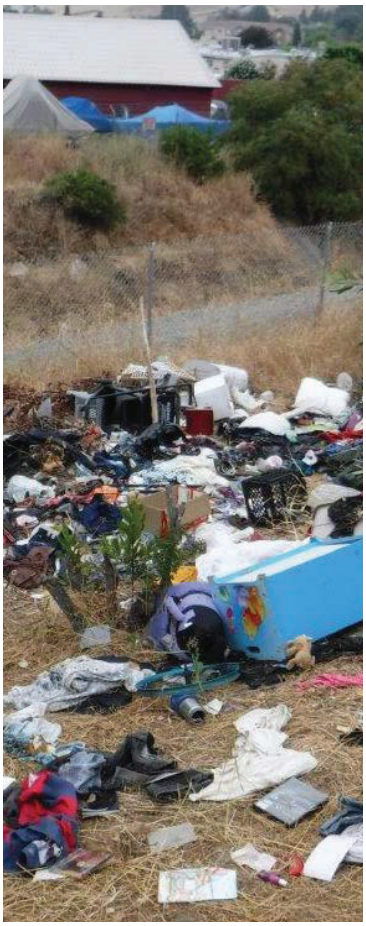
Estimated total project cost: $80.0 million



Preparing for weed abatement at Uvas Creek

PROJECT F5: ENCAMPMENT CLEANUP

- Reduces the accumulation of trash and other pollutants in local waterways
- Reduces flood risk
- Coordinates Valley Water's efforts with multiple agencies to create lasting solutions to reduce homeless encampments near waterways



Homeless encampment site

PROJECT F5
GOOD NEIGHBOR PROGRAM: ENCAMPMENT CLEANUP

This project supports Valley Water's ongoing coordination with local cities and agencies to clean up trash from encampments near waterways or on Valley Water property. Such encampments contribute to contamination of waterways and damage to Valley Water facilities. This is a cooperative effort partnering with local municipalities and other agencies for services related to encampment cleanups and to help provide alternatives to homelessness.

This project will also provide funding for local municipalities' services supporting staff safety as they work around encampments and discouraging re-encampments along waterways.

Benefits

- Reduces the accumulation of trash and other pollutants in local waterways, including streams, reservoirs and wetlands
- Protects Valley Water facilities and reduces flood risk
- Improves the aesthetics of creeks in neighborhoods and along trails
- Coordinates Valley Water's efforts with multiple agencies to create lasting solutions to reduce homeless encampments near waterways

Key performance indicators

1. Perform 300 annual cleanups to reduce the amount of trash and pollutants entering streams.
2. Provide up to $500,000 per year in cost-share with local agencies for services related to encampment cleanups, including services supporting staff safety, discouraging re-encampments along waterways or addressing the homelessness crisis with the goal of reducing the need for encampment cleanups.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $38.7 million

Estimated total project cost: $38.7 million

PROJECT F6
GOOD NEIGHBOR PROGRAM: GRAFFITI AND LITTER REMOVAL AND PUBLIC ART

This project allows Valley Water to continue responding to requests for cleanup of illegal dumping, trash and graffiti on Valley Water's property and rights-of-way. Cleanup efforts include graffiti removal from floodwalls, concrete embankments, signs, structures and other Valley Water assets, as well as maintaining, repairing and installing fences and gates so that Valley Water structures and facilities remain safe and clean. The project also includes quarterly cleanups of problem trash sites to help reduce waterway pollution and keep creeks and riparian areas free of debris. The project also funds installation and maintenance of public art projects, such as murals, to beautify Valley Water property and infrastructure, to help deter graffiti and litter.

Benefits

- Reduces trash and contaminants in local waterways
- Improves the appearance of waterways in neighborhoods and parks by removing trash, graffiti and litter as well as illegally dumped items, such as cars, shopping carts, appliances, etc.
- Reduces illegal dumping into or near waterways by repairing and installing fencing on Valley Water property
- Provides coordinated response to community complaints about trash and graffiti in neighborhoods along waterways
- Helps deter graffiti and litter by implementing public art projects to beautify Valley Water property and infrastructure

Key performance indicators

1. Cleanup identified trash and graffiti hotspots at approximately 80 sites four (4) times per year.
2. Respond to requests on litter or graffiti cleanup within five (5) working days.
3. Provide up to $1.5 million over 15 years to implement public art projects on Valley Water property and infrastructure.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $13.1 million

Estimated total project cost: $26.4 million

PROJECT F6
GRAFFITI AND LITTER REMOVAL AND PUBLIC ART

- Improves the appearance of waterways in neighborhoods and parks by removing trash, graffiti and litter
- Provides coordinated response to complaints about graffiti and litter
- Helps deter graffiti and litter by implementing public art projects



Example of graffiti on Valley Water facility.

PROJECT F7: EMERGENCY RESPONSE UPGRADES

- Improves accuracy of flood forecasting services
- Improves emergency response times
- Addresses climate change through an adaptation strategy to track and understand uncertain future weather patterns



New stream gauge sensor.

PROJECT F7
EMERGENCY RESPONSE UPGRADES

This project supports ongoing development and maintenance of a robust flood forecasting system. The system facilitates the efficient dissemination of information to emergency responders and the public.

Benefits

- Improves the accuracy of flood forecasting services
- Improves emergency response times and information dissemination regarding upcoming storms and potential floods
- Provides information toward improving reservoir management to optimize flood risk reduction and water supply management
- Provides a real-time website that tracks and offers public access to local weather and flood forecasting information
- Increases atmospheric data collection network, data management and maintenance
- Addresses climate changes through an adaptation strategy to track and understand uncertain future weather patterns

Key performance indicators

1. Maintain existing capabilities for flood forecasting and warning.
2. Improve flood forecast accuracy and emergency response time working with the National Weather Service and through research and development.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $13.2 million

Estimated total project cost: $13.2 million

PROJECT F8
SUSTAINABLE CREEK INFRASTRUCTURE FOR CONTINUED PUBLIC SAFETY

This project supports Valley Water's long-term efforts to ensure that existing flood protection infrastructure continues to function sustainably and provide the level of service originally intended. The project includes: (1) assessing and prioritizing existing creek and watershed infrastructure; (2) preparing watershed and/or creek asset management plans; and (3) implementing recommendations of asset management plans.

Undertaking this project provides for adaptive management of existing infrastructure, ensuring infrastructure continues to provide flood protection and public safety as climate and other changes evolve.

Benefits

- Ensures that existing flood protection infrastructure continues to function sustainably and provide the level of service originally intended
- Preserves and extends the life of flood protection infrastructure
- Strengthens the reliability of flood protection infrastructure

Key performance indicator

1. Provide up to $7.5 million in the first 15-year period to plan, design and construct projects identified through Watersheds asset management plans.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water Renewal: $7.5 million

Estimated total project cost: $15.0 million

PROJECT F8: SUSTAINABLE CREEK INFRASTRUCTURE FOR CONTINUED PUBLIC SAFETY

- Strengthens the reliability of flood protection infrastructure
- Ensures existing flood protection infrastructure continues to function sustainably and provide the level of service intended



San Tomas erosion repair.

PROJECT F9: GRANTS AND PARTNERSHIPS FOR SAFE, CLEAN WATER, FLOOD PROTECTION AND ENVIRONMENTAL STEWARDSHIP

- Increases collaborations and partnerships with cities, the County, non-profit organizations, schools and other stakeholders
- Leverages community resources for efficient use of funds



Fremont High School Water to Go - a filling station funded by the 2012 Safe, Clean Water Program

PROJECT F9
GRANTS AND PARTNERSHIPS FOR SAFE, CLEAN WATER, FLOOD PROTECTION AND ENVIRONMENTAL STEWARDSHIP

This project provides grants and partnerships for agencies, organizations and individuals for water conservation, pollution prevention, creek cleanups and education, wildlife habitat restoration and wildlife corridors and crossings, and access to trails and open space. Eligible projects include water conservation; recycled water programs and infrastructure; pollution prevention programs; watershed stewardship; creek cleanups; education; and developing plans and/or implementing projects that create or enhance wetland, riparian and tidal marsh habitat; protect special status species; improve fish passage and habitat; remove non-native, invasive plant species; plant native species; partnerships to remove flood-inducing blockages, and provide access to creekside trails or trails that provide a significant link to the creekside trail network.

Benefits

- Leverages community resources for efficient use of funds to implement projects that conserve water, prevent trash and contaminants from entering our waterways and groundwater, enhance creek and bay ecosystems, and expand trail and open space access
- Increases collaborations and partnerships with cities, the County, nonprofit organizations, schools and other stakeholders
- Promotes public involvement, awareness and education of safe, clean drinking water, flood protection and environmental stewardship through community-led projects
- Broadens opportunities for smaller jurisdictions

Key performance indicators

1. Provide a grant and partnership cycle each year for projects related to safe, clean drinking water, flood protection and environmental stewardship.
2. Provide annual funding for bottle filling stations to increase drinking water accessibility, with priority for installations in economically disadvantaged communities and locations that serve school-age children and students.
3. Provide annual mini-grant funding opportunity for projects related to safe, clean drinking water, flood protection and environmental stewardship.
4. Provide up to $3 million per 15-year period for partnerships with small municipalities (defined as under 50,000 people in the most recent census available), or special districts with boundaries substantially within the footprint of small cities, for projects aligned with the District Act and related to safe, clean drinking water, flood protection and environmental stewardship.

Geographic area of benefit: Countywide

Estimated funding from Safe, Clean Water: Renewal $53.1 million

Estimated total project cost: $53.1 million

What happens to Priority F projects if funding is not available?

The projects under this priority are critical to public health and public safety. Without funding, our creeks could become overrun with encampments, trash and debris, causing blockages that could lead to flooding and impacting the quality of our water.

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Financing

The proposed extension of the Safe, Clean Water and Natural Flood Protection Program (Safe, Clean Water Program) would update and extend the measure that voters approved with an overwhelming majority in 2012. If approved by voters, the revenue from the proposed Safe, Clean Water Program renewal would continue to be collected in the same manner as under the current 2012 Safe, Clean Water Program. All existing active projects started under the current 2012 Safe, Clean Water Program would continue under the proposed Safe, Clean Water renewal.

The proposed Safe, Clean Water Program renewal is expected to generate approximately $45.5 million each year in 2020 dollars. In the first 15 years, an estimated $682.5 million is expected to be generated to help fund the 32 capital and operating projects listed and discussed in previous chapters. This figure does not include a potential annual escalator that the Board may utilize to account for inflation, as described further below. Since the renewal is proposed to continue until repealed by voters, completed projects would be replaced with new projects to meet community needs and address the challenges of the time.

Furthermore, after a period of no longer than 15 years, the Valley Water Board would evaluate the need for the Safe, Clean Water Program and determine whether the special tax should be reduced or repealed or maintained to build additional projects that accomplish the community identified Safe, Clean Water Program priorities. Should the Board determine that no additional projects are needed, the Safe, Clean Water and Natural Flood Protection Program special tax would be reduced accordingly to reflect a transition from funding new projects to funding operation, maintenance and replacement of projects that were constructed with Safe, Clean Water Program funds. This process would include the Valley Water advisory committees and the Safe, Clean Water Program's independent monitoring committee (IMC) making recommendations to the Board on whether to reduce, repeal or maintain the special tax. This evaluation will take place every 15 years.

The proposed Safe, Clean Water Program renewal would follow 15-year financial planning cycles. This will allow Valley Water to align the budget each year with the projects' key performance indicators as well as long-term planning efforts, such as the Capital Improvement Program.

The proposed Safe, Clean Water Program renewal would build in flexibility to revisit the projects to ensure they continue to align with the community's and the Board's priorities, as well as meet new challenges or take advantage of new opportunities that arise. Five-year implementation plans would also be developed to serve as checkpoints during implementation of the proposed Safe, Clean Water Program renewal.

In addition to these forward-looking plans, each year Valley Water would produce an annual report, which looks back on the prior fiscal year and reports on each project's expenditures and progress towards delivery of its key performance indicators (KPIs). Those annual reports would be reviewed by the Independent Monitoring Committee, which would make recommendations to the Board regarding any adjustments or modifications that may be required. Furthermore, the proposed Safe, Clean Water Program renewal would continue the practice of the 2012 Safe, Clean Water Program to require independent audits every five years, and include a change control process, which would require all adjustments be made by the Board during board meetings. Modifications to KPIs or decisions to not implement a project would require public hearings.

FINANCIAL HIGHLIGHTS

- Primary source of revenue for the proposed Safe, Clean Water Program renewal is a special parcel tax
- Proposed Safe, Clean Water Program renewal is expected to generate approximately $45.5 million each year
- Proposed Safe, Clean Water Program renewal will follow 15-year financial planning cycles
- An estimated $682.5 million is expected to be generated in the first 15 years to help fund 32 capital and operating projects
- Proposed program renewal is an extension of the current 2012 Safe, Clean Water Program, as such the parcel tax will continue to be assessed at the same rates as under the current 2012 program

This financial section provides an overview of the proposed update to the Safe, Clean Water Program, including revenues, financing, expenditures, special tax rate structure, and details on the transition from the existing 2012 Safe, Clean Water Program.

Financial Highlights

RATE STAYS THE SAME

Because the proposed program renewal would be an extension of the current 2012 Safe, Clean Water Program, the parcel tax would continue to be assessed at the same rates as under the current 2012 program. Note that taxes for FY2021-22 would only be assessed and collected based on whichever is in effect, either the existing Safe, Clean Water Program, or the renewed Safe, Clean Water Program, if it passes.

LOCAL TAX STAYS LOCAL

As with the current 2012 Safe, Clean Water Program, the update would be used for specific local projects only. The state cannot redirect the money to other non-local projects or obligations.

SEAMLESS TRANSITION

If voters approve the proposed update, they would not notice any difference in their tax rate. The Safe, Clean Water charge would continue to be assessed as it has been since the passage of the current program in 2012. The official start of the proposed Safe, Clean Water Program renewal would occur on July 1, 2021, and Valley Water would receive first revenue from the special tax in January 2022.

CONSUMER PRICE INDEX (CPI) ADJUSTMENT

The tax would continue to be assessed in the same manner, but the Valley Water Board of Directors may adjust it annually to account for inflation. If they elect to do so, they would adjust the tax using the San Francisco-Oakland-San José Consumer Price Index for all Urban Consumers. If the Consumer Price Index is lower than 2%, the Board may set it up to 2%.

RECOVERY OF COSTS OF NATURAL DISASTER DAMAGE

Extreme weather and natural disasters such as wildfires and floods are becoming more frequent, endangering infrastructure that delivers safe, clean water to the community or that provides flood protection. The best way to deal with the possibility of damage to these facilities from natural disasters is through prevention, which is included in projects covering emergency response preparedness, upgrades and assessments. However, we cannot control nature, and sometimes there will be unanticipated disasters and damage. In such an event, the Board may increase the special tax rates to meet the repair cost of Valley Water facilities damaged by flooding or other natural disasters. The maximum tax rate shall be the percentage increase in the Consumer Price Index plus up to 4.5% to cover the repair costs. A special tax rate increase such as this can only be collected for three years after an unanticipated disaster has occurred.



EXEMPTION FOR LOW-INCOME SENIOR CITIZENS

Though the rate is relatively low, it can still be a burden for low-income seniors. That is why Valley Water would continue to provide an exemption from the tax for those who are low-income, own at least 50% of the property they reside in and have turned 65 years old before the end of the fiscal year in which the tax is due. Many low-income seniors already receive the exemption under the current 2012 program, and would continue to receive the exemption under the renewed program. Low-income seniors not currently receiving the exemption would need to apply. "Low-income" is defined as 75% of the state median total household income. The latest available data from 2018 indicates that the state median total household income level was $75,277; "low income" would then be $56,458.

FUNDING SOURCES

The proposed Safe, Clean Water Program renewal derives its funding for projects from four sources: the special parcel tax, capital reimbursements, interest earnings and carryover of the reserves from unspent funds under the current 2012 Safe, Clean Water Program.

The special tax is expected to generate $45.5 million per year in the first 15 years. Capital reimbursements are expected to account for $107 million during that same period, and interest earnings are expected to be $21.3 million. The reserves that will carry over are estimated to total $70.0 million.

SPECIAL PARCEL TAX REVENUE

The primary source of revenue for the proposed Safe, Clean Water Program renewal is a special parcel tax. The revenue can be used for any voter-approved purpose, such as construction projects, maintenance and other services, including those benefiting public health and public safety, all as listed in this report.

By potentially continuing the Safe, Clean Water Program with updates to address current needs, Valley Water can avoid the extra costs of developing a new type of tax program. The rate structure for calculating the special parcel tax would remain the same and would be applied equitably and consistently throughout the county. It is based on the size of each parcel and its use, which relates to the stormwater runoff from each parcel. The majority of program activities and benefits are directly or indirectly related to stormwater runoff, and this nexus would be maintained for the life of the Safe, Clean Water Program renewal. Land use, estimated stormwater runoff and the special tax calculation formula are described in Appendix D.

Because the proposed program renewal is an extension of the current 2012 Safe, Clean Water Program, the parcel tax would continue to be assessed at the same rates as under the current 2012 program.

CARRYOVER OF RESERVES

The current 2012 Safe, Clean Water Program uses a mixture of pay-as-you-go funding and debt financing to pay for the included projects. Pay-as-you-go financing, which means that Valley Water does not begin construction until there are sufficient funds in hand, has resulted in accumulated reserves for certain projects. As of July 1, 2021, Valley Water is projected to have $70.0 million in reserves designated for 2012 Safe, Clean Water Program projects, and that money would continue to be available to those projects under the proposed Safe, Clean Water Program renewal.

STATE REIMBURSEMENTS AND OTHER CONTRIBUTIONS

Certain flood protection projects carried forward from the 2012 Safe, Clean Water Program to the proposed Safe, Clean Water Program renewal are eligible to receive subvention funds from the California Department of Water Resources' State Flood Control Subventions Program. These subventions



Left image: 2012 Safe, Clean Water Program - Upper Berryessa Creek Flood Protection Project - Finalized Trestle Bridge.

2012 Safe, Clean Water Program - Calabazas Creek Flood Protection Project completion ceremony.

are financial reimbursements available to local agencies that construct federally authorized flood protection projects, and certain Valley Water flood protection projects have already begun to receive these subventions, making them a secondary source of funding for the proposed Safe, Clean Water Program renewal.

For the list of flood protection projects under the proposed Safe, Clean Water Program renewal, Valley Water expects to receive $6.9 million in the first 15 years. That is expected to increase as the listed projects are completed and new ones are added.

Federally authorized flood protection projects do not typically receive money directly from the federal government; however, by partnering with the U.S. Army Corps of Engineers when possible, Valley Water receives in-kind work including planning, design and construction.

In addition, Valley Water is seeking $80 million from the Natural Resource Conservation Service (NRCS) to help fund a critical portion of the Upper Llagas flood protection project. Finally, Valley Water is seeking $20 million in grants and partnership funding to complete the San Francisquito Creek flood protection project.

While it is planned that Valley Water will apply for these grants/state reimbursements, there is no guarantee of receipt.

INTEREST EARNINGS

Funds awaiting use accumulate interest, primarily in the pay-as-you-go capital program financing method.

PAY-AS-YOU-GO AND DEBT FINANCING FOR CAPITAL PROJECTS

The proposed Safe, Clean Water Program renewal would use a combination of pay-as-you-go and debt financing to pay for capital projects. While Valley Water must wait until it has sufficient funds to begin work under the pay-as-you-go financing structure, debt financing allows Valley Water to borrow money upfront against the stream of revenue projected over the course of the proposed Safe, Clean Water Program renewal. Over the first 15 years of the proposed Safe, Clean Water Program, Valley Water anticipates receiving $310 million of Debt Proceeds.

FUNDING USES

Funding for the proposed Safe, Clean Water Program renewal would be used to achieve various aspects of it, including implementing the priorities through the various projects, planning and delivery, debt financing, and unanticipated expenditures.



2012 Safe, Clean Water Program Grants and Partnerships - Oak Cove Trail

Some of the projects included in the proposed Safe, Clean Water Program renewal have already begun. Funding would be allocated to these projects to see them through to completion as described on a project by project basis.

DEBT SERVICE, DEBT PROCEEDS, AND RATE STABILIZATION RESERVE

Valley Water currently projects that $310 million in debt would be issued with 30-year repayment terms within the first 15 years of the program. Average annual debt service is estimated at $19.7 million, totaling $296.1 million over the first 15 years of the program and $627 over the first 30 years.

A Rate Stabilization Reserve is planned with funding levels that range from $0 million to $74 million over the first 15 years of the proposed Safe, Clean Water Program renewal to help ensure that the debt service coverage ratio is maintained at a minimum of one times the annual debt service amount on a net basis (current year revenues less current year operating and maintenance expense and transfers in/out). In year seven (7) (FY 2027-28), $59 million is planned to be transferred to the Water Utility fund, primarily to fund the Anderson Dam Seismic Retrofit project. The Rate Stabilization Reserve is planned to be drawn down in that year to fund the transfer.

SUMMARY OF FUNDING SOURCES AND USES

As shown in the table below, for the first 15 years of the proposed Safe, Clean Water Program renewal, funding sources are projected to exceed expenditures such that a $40 million Contingency Reserve would be eventually accumulated, helping to ensure Valley Water would be able to deliver on the commitments made in the November 2020 ballot. In addition, undesignated reserves are projected at $50 million by the end of the first 15-year cycle of which $28 million is the projected minimum balance per Board policy.

PROPOSED SAFE, CLEAN WATER RENEWAL PROGRAM, FIRST 15 YEARS	FORECAST INFLATED $M
Funding sources	
Parcel tax revenue ($682.5M without 2% escalator)	817
Beginning reserves (Carryforward from 2012 program)	70
Capital reimbursements	107
Interest and miscellaneous	24
Total funding sources	**1,017**
Funding uses	
Safe, Clean Water Plan Priorities	
Priority A: Ensure a Safe, Reliable Water Supply	28
Priority B: Reduce Toxins, Hazards, and Contaminants in Our Waterways	59
Priority C: Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters	54
Priority D: Restore Wildlife Habitat and Provide Open Space	155
Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways	343
Priority F: Support Public Health and Public Safety for Our Community	281
Subtotal Program Priorities A through F	**919**
SCW planning & delivery	22
Cost of financing *	(14)
Contingency Reserve	40
Undesignated	50
Total funding uses	**1,017**

* Borrowing for 30 years pushes some debt service out to 2nd 15-year cycle, which causes negative in the 1st 15-year cycle.

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Implementing the Program

To keep the public apprised of the use of their tax dollars, a potential renewal of the 2012 Safe, Clean Water Program would continue to include oversight, transparency and accountability. Updated and enhanced, the proposed Safe, Clean Water Program renewal would extend funding until repealed by voters.

Additionally, after a period of no longer than 15 years, the Valley Water Board would evaluate the need for the Safe, Clean Water Program and determine whether the special tax should be reduced or repealed or maintained to build additional projects that accomplish the community identified Safe, Clean Water Program priorities. Should the Board determine that no additional projects are needed, the Safe, Clean Water and Natural Flood Protection Program special tax would be reduced accordingly to reflect a transition from funding new projects to funding operation, maintenance and replacement of projects that were constructed with Safe, Clean Water Program funds. This process would include the Valley Water advisory committees and the Safe, Clean Water Program's independent monitoring committee (IMC) making recommendations to the Board on whether to reduce, repeal or maintain the special tax. This evaluation will take place every 15 years.

The proposed Safe, Clean Water and Natural Program would follow 15-year financial planning cycles. Prior to the development of each 15-year financial plan Valley Water would conduct outreach to engage the community and key stakeholders, including the Safe, Clean Water Program's independent monitoring committee (IMC) and Valley Water advisory committees, to help ensure that the Program priorities remain aligned with the priorities of the residents of Santa Clara County.



2012 Safe, Clean Water Program - Independent Monitoring Committee tour of the McKelvey Park flood detention facility, which is part of the Permanente Creek Flood Protection Project

As projects under the proposed Safe, Clean Water Program are completed, the Board shall identify and prioritize new projects for inclusion in the Program. These new projects may be identified and proposed for Board approval at a public meeting through the Board's review and approval of the five-year implementation plans or as directed by the Board.

Structure of the Program includes Transparency

The structure for the current 2012 Safe, Clean Water Program is guiding that of the proposed renewal. Because times, circumstances and needs change, the potential renewal would continue to provide flexibility through development of implementation plans every five years, an annual report on expenditures and project progress, and a detailed change control process to allow adjustments and modifications. These provisions provide transparency, giving the public an opportunity to see how their tax dollars are being put to work, and giving Valley Water a means to address new challenges or opportunities.

To begin, Valley Water would continue compiling five-year implementation plans for the Safe, Clean Water Program renewal, as is the practice with the current 2012 Safe, Clean Water Program. These plans outline the expected focus on these projects for the upcoming five years. They also provide an opportunity to reassess projects and key performance indicators (KPIs), to ensure they continue to fulfill the existing

The transparency provided by the various check-in points and public session discussions of any potential changes allows the public an unvarnished look into the program's accomplishments, expenditures and opportunities for improvement.

priorities of the community and Board of Directors and address any new needs that may arise.

The Board would not be limited to making changes to the program at these 5-year intervals. The Board may make changes to reflect any economic, policy or regulatory changes or in response to recommendations from external independent audits or from the independent monitoring committee that provides independent oversight of the program.

All adjustments that the Board makes must be made during the public session of the Board's meetings, and any changes to the KPIs or decisions not to implement a project require a public hearing before being voted on by the Board.

Accountability

Accountability remains important in the proposed continuation of the program as well. The transparency provided by the various check-points and public Board discussions of any potential changes allows the public an unvarnished look into the program's accomplishments, expenditures and opportunities for improvement.

The establishment of an independent citizen oversight committee, as existing with the current 2012 Safe, Clean Water Program and stipulated in the proposed Safe, Clean Water Program renewal, would provide a dedicated, independent body to keep track of included priorities and projects. The Board would appoint individuals to this IMC. Staff would produce annual reports and make them available to Santa Clara County residents and the IMC, providing details of the updated Safe, Clean Water Program's finances and the progress made on all the projects. The IMC would use these annual reports to provide independent oversight and to make recommendations to the Board regarding adjustments or modifications that may be required of the potentially renewed Safe, Clean Water Program.

The IMC would also review each proposed five-year implementation plan prior to its submittal for Board approval. Through review of both the annual reports and five-year implementation plans, the IMC may make recommendations to the Valley Water Board regarding reasonably necessary measures to meet the priorities of the Safe, Clean Water Program. Every 15 years, the IMC would review, and recommend to the Board and general public, whether the special tax should be reduced or repealed or maintained to build additional projects to accomplish the community identified Safe, Clean Water Program priorities.

In addition, Valley Water is proposing requiring audits of the proposed Safe, Clean Water Program renewal every five years by an independent organization. This would give Valley Water and the residents and businesses of Santa Clara County another unbiased window into the Safe, Clean Water Program and would provide specific recommendations for change if necessary.

Because this is a measure specifically endorsed by the voters, changing it is not something Valley Water takes lightly. If passed, Valley Water would adhere as closely to the renewed Safe, Clean Water Program as possible. However, sometimes circumstances change and a project that was listed under the community- and Board-approved priorities may no longer be feasible or beneficial. In that case, the project may require a change to its KPIs, or no longer need to be implemented under the updated Safe, Clean Water Program.

Changing the KPIs or deciding not to implement a project are important changes that require careful consideration. Under the current 2012 Safe, Clean Water Program, Valley Water is implementing a change control process that adheres to best practices and helps the program remain accountable to the voters. As per this process, any such changes would require a public hearing at a Board meeting, during which members of the public would be able to share their opinions on the recommendation.

Valley Water always strives to be responsible to all in our community. Recognizing that a special parcel tax can pose an economic difficulty for low-income senior citizens, Valley Water has built a continuation of the current practice of providing an exemption from the tax for qualifying low-income senior citizens into the proposed renewal of the program. This has been an important part of the existing 2012 Safe, Clean Water Program and a feature for which the community expressed support.



Board discussion regarding the Upper Llagas Creek Flood Protection Project on January 10, 2017.

Role of the Board

Valley Water is governed by a 7-member elected Board whose responsibility includes reviewing the proposed renewal of the 2012 Safe, Clean Water Program and make decisions regarding its implementation. This responsibility also includes reviewing the performance and financial analyses of the potential Safe, Clean Water Program renewal, reviewing reports and updates from staff and the independent monitoring committee, and carefully considering community input.

Through the aggregation of this information, the Board will decide whether and what to modify, add to or delete from the proposed Safe, Clean Water Program renewal. It is the Board's duty to conduct this business in open, public sessions and to hold public hearings on specific requests for changes to a project's KPIs or if deciding not to implement a project.

Additionally, after a period of no longer than 15 years, the Valley Water Board would evaluate the need for the Safe, Clean Water Program and determine whether the special tax should be reduced or repealed or maintained to build additional projects that accomplish the community identified Safe, Clean Water Program priorities.

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BOARD OF DIRECTORS
SANTA CLARA VALLEY WATER DISTRICT

RESOLUTION NO. 20-64

PROVIDING FOR THE CONTINUATION AND LEVY OF A SPECIAL TAX TO PAY THE COST OF THE SAFE, CLEAN WATER AND NATURAL FLOOD PROTECTION PROGRAM IN THE COMBINED FLOOD CONTROL ZONE OF THE SANTA CLARA VALLEY WATER DISTRICT SUBJECT, NEVERTHELESS, TO SPECIFIED LIMITS AND CONDITIONS

WHEREAS, the Santa Clara Valley Water District (Valley Water) policy is to ensure current and future water supplies and provide healthy, clean, and reliable water in Santa Clara County; and

WHEREAS, Valley Water policy is to protect Santa Clara County creeks, reservoirs, Monterey Bay, and San Francisco Bay from toxins, pollutants, and contaminants; and

WHEREAS, Valley Water policy is to provide for flood water and storm water flood protection to residents, businesses, visitors, public highways, and the watercourses flowing within the District; and

WHEREAS, Valley Water policy is to protect our water supply, pipelines, and local dams from earthquakes and natural disasters; and

WHEREAS, Valley Water maintains a flood protection system of levees, channels, drains, detention basins, and other improvements upon which the lives and property of Valley Water residents depend, which said improvements must be kept in a safe and effective condition; and

WHEREAS, the Valley Water policy is to protect, enhance, and restore healthy Santa Clara County creeks, watersheds, and bay lands ecosystems; and

WHEREAS, in 2000, voters passed the 15-year Clean, Safe Creeks and Natural Flood Protection Plan; and

WHEREAS, the Valley Water policy is to engage in partnerships with the community to provide open spaces, trails, and parks along Santa Clara County creeks and watersheds; and

WHEREAS, in November 2012, voters passed the Safe, Clean Water and Natural Flood Protection Program which replaced the Clean, Safe Creeks and Natural Flood Protection Plan in its entirety when it became effective on July 1, 2013; and

WHEREAS, the Safe, Clean Water and Natural Flood Protection Program was originally scheduled to sunset on June 30, 2028; and

WHEREAS, in order to protect Santa Clara County water supplies, creeks, watersheds, and bay lands and ensure residents have an ample supply of clean water in the future, Valley Water will need a dedicated source of revenue in the future and beyond 2028 to maintain the programs established in the Safe, Clean Water and Natural Flood Protection Program; and

WHEREAS, the California State Legislature has authorized Valley Water to levy a special tax on each parcel of property within Valley Water or any zone or zones thereof upon approval by a two-thirds vote of the electorate of Valley Water or zones therein; and

Providing for the Continuation and Levy of a Special Tax to Pay the Cost of the Safe, Clean Water and Natural Flood Protection Program in the Combined Flood Control Zone of the Santa Clara Valley Water District Subject, Nevertheless, to Specified Limits and Conditions

Resolution No. 20-64

WHEREAS, the purpose of the special tax is to supplement other available but limited revenues to keep said improvements in a safe and effective condition; to enable Valley Water to respond to emergencies; to perform maintenance and repair; to acquire, restore, and preserve habitat; to provide opportunities and access to recreation; to conduct environmental education; to protect and improve water quality; and to construct, operate, and maintain flood protection and storm drainage facilities; to support public health and public safety through efforts authorized by the District Act; and to fund the cost of financing such activities; and

WHEREAS, State California Environmental Quality Act (CEQA) Guidelines Section 15378(b)(4), states that government funding mechanisms are not projects subject to the requirements of CEQA.

NOW, THEREFORE BE IT RESOLVED by the Board of Directors of the Santa Clara Valley Water District as follows:

FIRST: The Board hereby finds that since (a) the management of creeks, watersheds, and bay lands are necessary to ensure safe, clean water and to protect, enhance and restore healthy ecosystems, (b) the construction and management of flood protection services are made necessary by stormwater runoff, and (c) the lands from which runoff derives are benefitted by provision of means of disposition which alleviates or ends the damage to other lands affected thereby, by direct protection of loss of property, and other indirect means which include improved aesthetics and quality of life, the basis on which to levy the special tax is at fixed and uniform rates per area and county or city designated land use of each parcel, taxed as such parcel is shown on the latest tax rolls.

SECOND: Pursuant to the authority of Section 3 of the District Act, a Combined Zone consisting of the aggregate metes and bounds descriptions of Zones One, Two, Three, Four, and Five is presently existing as generally depicted in Attachment 1.

THIRD: A special Valley Water Election for November 3, 2020 will be called within said District, on the proposition of levy of a special tax.

FOURTH: Subject to approval by two-thirds of the electors of Valley Water voting at such election and pursuant to the authority vested in the Board, there is hereby established a special tax as authorized by this resolution, the proceeds of which shall be used solely for the purpose of supporting the priorities of the Safe, Clean Water and Natural Flood Protection Program. The priorities are summarized in Attachment 2. The Safe, Clean Water and Natural Flood Protection Program Report (hereafter “Report”) generally describes the priorities. This tax shall be instituted with the following provisions:

A. The Chief Executive Officer (CEO) or designee of Valley Water is directed to cause a written Report to be prepared for each fiscal year for which a special tax is to be levied and to file and record the same, all as required by governing law. Said Report shall include the proposed special tax rates for the upcoming fiscal year at any rate up to the maximum rate approved by the voters. Valley Water’s Board of Directors shall consider formal acceptance of this Report at a public meeting and shall thereafter make a final determination of special taxes with a confirming resolution. A special fund shall be established into which proceeds from the tax shall be deposited. Proceeds from the tax may be used only for the Safe, Clean Water and Natural Flood Protection Program.

B. The CEO, or designee of Valley Water may cause the special tax to be corrected in the same manner as assessor's or assessee's errors may be corrected but based only upon any or all of the following:

1. Changes or corrections in ownership of a parcel;
2. Changes or corrections of address of an owner of a parcel;
3. Subdivision of an existing parcel;
4. Changes or corrections in the use of all or part of a parcel;
5. Changes or corrections in the computation of the area of a parcel;
6. As to railroad, gas, water, telephone, cable television, electric utility right of way, electric line right of way, or other utility right of way properties.

Changes and corrections are not valid unless and until approved by the Board.

C. The Clerk of the Board shall immediately file certified copies of the final determination of special taxes and confirming resolution with the Auditor-Controller of the County of Santa Clara and shall immediately record with the County Recorder of said County a certified copy of the resolution confirming the special tax.

D. The special tax for each parcel set forth in the final determination by the Board shall appear as a separate item on the tax bill and shall be levied and collected at the same time and in the same manner as the general tax levy for county purposes. Upon recording of the resolution confirming the special tax such special tax shall be a lien upon the real property affected thereby.

E. Failure to meet the time limits set forth in this resolution for whatever reason shall not invalidate any special tax levied hereunder.

F. No special tax for the Safe, Clean Water and Natural Flood Protection Program shall be imposed upon a federal or state or local governmental agency. Where real property owned by a federal, state, or local agency is leased to a private person or private entity, the private interest so created shall be separately assessed as a possessory interest and the special tax for the Safe, Clean Water and Natural Flood Protection Program shall be levied on all holders of such possessory interests. With said exceptions, a Safe, Clean Water and Natural Flood Protection Program special tax is levied on each parcel of real property in the five Flood Control Zones of Valley Water subject to this resolution for the purposes stated in the Report and in this resolution. Except for the minimum special tax as hereinafter indicated, the special tax for each parcel of real property in each such zone is computed by determining its area (in acres or fractions thereof) and land use category (as hereinafter defined) and then multiplying the area by the special tax rate applicable to land in such land use category. A minimum special tax may be levied on each parcel of real property having a land area up to 0.25 acre for Groups A, B, and C, up to 10 acres for Groups D and E Urban and, for Group E Rural, the minimum special tax shall be that as calculated for the E Urban category.

G. Land use categories for each parcel of land in Valley Water are defined and established as follows:

Group A: Land used for commercial or industrial purposes.

Group B: Land used for institutional purposes such as churches and schools or multiple dwellings in excess of four units, including apartment complexes, mobile home parks, recreational vehicle parks, condominiums, and townhouses.

Group C: (1) Land used for single-family residences and multiple-family units up to four units and (2) the first 0.25 acre of a parcel of land used for single-family residential purposes.

Group D: (1) Disturbed agricultural land, including irrigated land, orchards, dairies, field crops, golf courses, and similar uses and (2) the portion of the land, if any, in excess of 0.25 acre of a parcel used for single-family residential purposes.

Group E: Vacant undisturbed land (1) in urban areas and (2) in rural areas including dry farmed land, grazing and pasture land, forest and brush land, salt ponds, and small parcels used exclusively as well sites for commercial purposes.

Group F: Parcels used exclusively as well sites for residential uses are exempt from the special tax.

H. The special tax amounts applicable to parcels in the various land uses shall be as prescribed by the Board of Directors in each fiscal year (July 1 through June 30) beginning with fiscal year 2021-2022 as set forth in Attachment 3, which is incorporated herein by reference, and as required by law; provided, that the annual basic special tax unit (single-family residential parcel of 1/4 acre or less) shall not exceed a maximum limit of $67.67 annually (averaging $0.006 per square foot annually), as adjusted by the compounded percentage increases of the San Francisco-Oakland-San Jose Consumer Price Index (CPI-U) for all Urban Consumers (or an equivalent index published by a government agency) in the year or years after April 30, 2021; provided, however, that appropriate amounts may be increased in any year by up to the percentage increase of the San Francisco-Oakland-San Jose Consumer Price Index for all Urban Consumers in the preceding year or two percent (2%) whichever is greater; provided further, however, that in any period, not exceeding three years, immediately following a year in which the Governor of the State of California or the President of the United States has declared an area of said zones to be a disaster area by reason of flooding or other natural disaster, then to the extent of the cost of repair of Valley Water facilities damaged by such flooding or other natural disaster, the maximum tax rate shall be the percentage increase in CPI-U plus 4.5 percent; and provided, that special taxes for the Safe, Clean Water and Natural Flood Protection Program shall be levied annually until ended by voters.

I. In the event that the county or city designated land use for a parcel is different than the actual land use, the CEO of Valley Water may, pursuant to written policies and procedures, cause the special tax to be adjusted based upon any or all of the following:

1. The parcel owner shall provide Valley Water a claim letter stating that the present actual land use is different than the county or city designated land use, including an estimate of the portion of the parcel that is different than the designated land use. Such claim is subject to investigation by Valley Water as to the accuracy of the claim. Parcel owner shall furnish information deemed necessary by Valley Water to confirm the actual uses and areas in question which may include, but not be limited to, a survey by a licensed surveyor.

2. The parcel owner shall request Valley Water to inspect the parcel and reevaluate the parcel tax.

3. The parcel owner shall notify Valley Water after a substantial change in the actual land use occurs, including a new estimate of the portion of the parcel that is different than the designated land use.

4. Valley Water may inspect and verify the actual land use for these parcels on a regular basis and will notify the appropriate parcel owners when it is determined that the actual land use has matched a county or city designated land use. Valley Water shall then correct the special tax rates for these parcels accordingly.

J. Pursuant to state law, Valley Water may provide an exemption from the special tax for low income owner-occupied residential properties for taxpayer-owners who are 65 years of age or older, the following shall apply:

Residential parcels where the total annual household income does not exceed 75 percent of the latest available figure for state median income at the time the annual tax is set, and such parcel is owned and occupied by at least one person who is aged 65 years or older is qualified to apply for an exemption from the applicable special tax.

K. The Safe, Clean Water and Natural Flood Protection Program shall follow 15-year financial planning cycles. This will allow Valley Water to align its budget each year with the projects' key performance indicators as well as long-term financial planning efforts, such as the Capital Improvement Program. Prior to the development of each 15-year financial plan, Valley Water will conduct outreach to engage the community and key stakeholders, including the Safe, Clean Water and Natural Flood Protection Program's independent monitoring committee (IMC) and Valley Water advisory committees, to help ensure that the Safe, Clean Water and Natural Flood Protection Program's priorities remain aligned with the priorities of the residents of Santa Clara County.

L. After a period of no longer than fifteen (15) years, the Board of Directors shall evaluate the need for the Safe, Clean Water and Natural Flood Protection Program, and make an affirmative determination of whether the special tax should be reduced or repealed, or is needed to build additional Projects to achieve related programmatic benefits in accordance with the priorities of the Safe, Clean Water and Natural Flood Protection Program. Should the Board of Directors determine that no additional Projects are needed, the Safe, Clean Water and Natural Flood Protection Program special tax will be

reduced accordingly, to reflect a transition from funding new Projects to funding operation, maintenance and replacement of Projects that were constructed with Safe, Clean Water and Natural Flood Protection Program funds. This evaluation process shall include the Valley Water advisory committees and the Program's IMC, which will be charged with making recommendations to the Board of Directors on the determination of whether the special tax should be reduced, repealed, or maintained. Following the first fifteen-year determination of continued need for the special tax, the determination shall be made every fifteen (15) years thereafter.

M. As projects under the Program are completed, the Board of Directors shall identify and prioritize new projects for inclusion in the Program. These new projects may be identified and proposed for Board approval at a public meeting through the Board's review and approval of the Program's five-year implementation plans, the first of which will be produced by the CEO or designee of Valley Water in year one of the Program and every five years thereafter; or, as directed by the Board.

N. The Board of Directors may direct that proposed projects in the Safe, Clean Water and Natural Flood Protection Program be modified or not implemented depending upon a number of factors, including federal and state funding limitations and the analysis and results of CEQA environmental review and permitting by state and federal regulatory agencies. The Board of Directors must hold a formal, public hearing on the matter, which will be noticed by publication and notification to interested parties, before adoption of any such decision to modify or not implement a project.

O. The Chief Financial Officer or designee of Valley Water shall file a fiscal year report with the Board of Directors no later than January 1 of each year for the prior fiscal year. The annual report shall contain both of the following: (a) the amount of funds collected and expended; and (b) the status of any project required or authorized to be funded under this resolution.

P. An external, independent monitoring committee (IMC) shall be appointed by the Valley Water Board of Directors to conduct an annual review of Valley Water's fiscal year report and provide an annual report from the IMC to the Board of Directors regarding implementation of the intended results of the Program. The IMC shall also review each proposed five-year implementation plan prior to its submittal for Board approval. Through review of both the annual reports and five-year implementation plans, the IMC may make recommendations to the Valley Water Board of Directors regarding reasonably necessary measures to meet the priorities of the Safe, Clean Water and Natural Flood Protection Program. Every fifteen years, the IMC will review, and recommend to the Board and general public, whether the special tax should be reduced or repealed, or is needed to build additional Projects to achieve related programmatic benefits in accordance with the priorities of the Safe, Clean Water and Natural Flood Protection Program as described in Paragraph L of this resolution.

Q. While the Safe, Clean Water and Natural Flood Protection Program is in effect, the Board of Directors shall conduct independent professional audits of the Program to provide for accountability and transparency at least every five years.

R. Grants and partnerships offered through the Safe, Clean Water and Natural Flood Protection Program, where aligned with the District Act and permitted by law, may

extend to state and local governmental organizations; organized community groups with an established structure; nonprofit organizations as defined by Internal Revenue Code subsections (c) or (d); schools, community colleges, or universities (public or nonprofit; non-profit organizations as defined under Internal Revenue Code section 501(c); religious or apostolic associations as defined under Internal Revenue Code section 501(d); for-profit organizations; and persons.

S. Pursuant to the State California Environmental Quality Act (CEQA) Guidelines Section 15378(b)(4), adoption of this resolution for continuation of the parcel tax and as a government funding mechanism, is not a project subject to the requirements of CEQA. Prior to commencement of any project included in the Safe, Clean Water and Natural Flood Protection Program, any necessary environmental review required by CEQA shall be completed.

T. Upon entering into effect, the Safe, Clean Water and Natural Flood Protection Program parcel tax authorized by this resolution and placed on the ballot by RESOLUTION NO. 20-63, shall repeal and replace the Safe, Clean Water and Natural Flood Protection Program parcel tax approved by the voters in 2012. On the date that the parcel tax authorized by this resolution and RESOLUTION NO. 20-63 goes into effect, the updated Safe, Clean Water and Natural Flood Protection Program (the priorities of which are summarized in Attachment 2) will replace in its entirety the previously approved Safe, Clean Water and Natural Flood Protection Program. Any tax payments already made by voters and collected for use by Valley Water for the prior Safe, Clean Water and Natural Flood Protection Program will be used to achieve priorities identified in this updated Safe, Clean Water and Natural Flood Protection Program. Funding for capital projects currently identified in the prior Safe, Clean Water and Natural Flood Protection Program, will continue under this updated Safe, Clean Water and Natural Flood Protection Program to meet previous commitments. All other projects and programs identified in the prior Safe, Clean Water and Natural Flood Protection Program will be replaced by comparable projects or programs with similar or expanded obligations under the updated Safe, Clean Water and Natural Flood Protection Program. Commitments for incomplete non-capital projects or programs carried forward from the 2012 Safe, Clean Water and Natural Flood Protection Program, shall continue at no less than the current levels (funding or key performance indicators) as identified in the comparable replacement projects or programs under the updated Safe, Clean Water and Natural Flood Protection Program, until such time as they are completed. Changes to funding levels or key performance indicators may only be made by the Board as set forth under Paragraphs K and L or through Board decisions via a Board-approved Change Control Process.

Providing for the Continuation and Levy of a Special Tax to Pay the Cost of the Safe, Clean Water and Natural Flood Protection Program in the Combined Flood Control Zone of the Santa Clara Valley Water District Subject, Nevertheless, to Specified Limits and Conditions

Resolution No. 20-64

PASSED AND ADOPTED by the Board of Directors of the Santa Clara Valley Water District by the following vote on July 21, 2020:

AYES:	Directors	Santos, Estremera, Keegan, Kremen, LeZotte, Varela, Hsueh
NOES:	Directors	None.
ABSENT:	Directors	None.
ABSTAIN:	Directors	None.

SANTA CLARA VALLEY WATER DISTRICT

NAI HSUEH
Chair, Board of Directors

ATTEST: MICHELE L. KING, CMC

Clerk, Board of Directors

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Providing for the Continuation and Levy of a Special Tax to Pay the Cost of the Safe, Clean Water and Natural Flood Protection Program in the Combined Flood Control Zone of the Santa Clara Valley Water District Subject, Nevertheless, to Specified Limits and Conditions

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ATTACHMENT 1
COVERSHEET

SCVWD FLOOD CONTROL ZONES AND BOARD DISTRICTS IN SANTA CLARA COUNTY

No. of Pages: 1

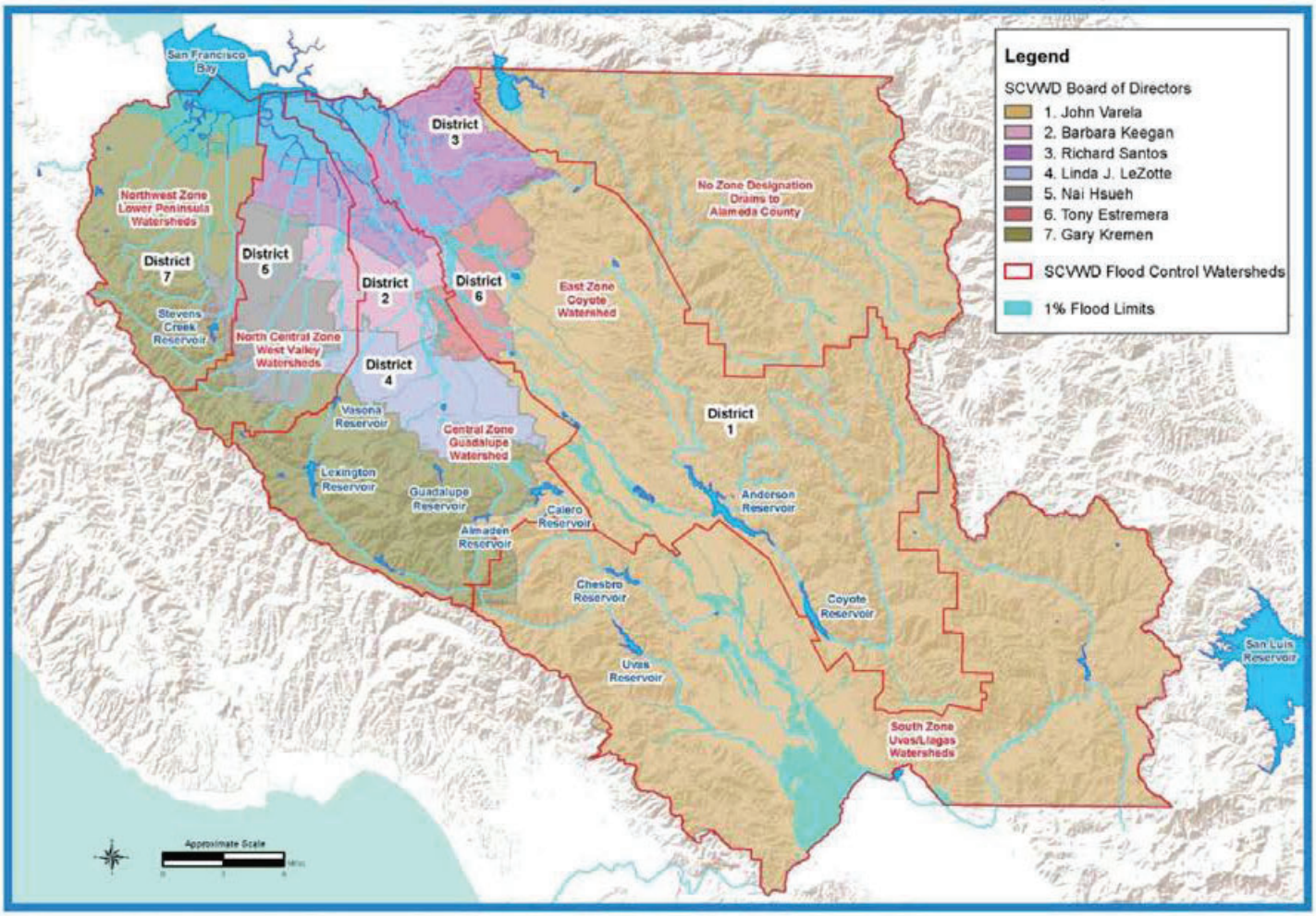
Additional Items: None.

RL14541

Resolution

APPENDIX A

SCVWD Flood Control Zones and Board Districts in Santa Clara County



GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

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Valley Water

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RL14541

Providing for the Continuation and Levy of a Special Tax to Pay the Cost of the Safe, Clean Water and Natural Flood Protection Program in the Combined Flood Control Zone of the Santa Clara Valley Water District Subject, Nevertheless, to Specified Limits and Conditions
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ATTACHMENT 2
COVERSHEET

SUMMARY OF KEY PERFORMANCE INDICATORS FOR THE FIRST 15 YEARS OF PROGRAM

No. of Pages: 5

Additional Items: None.

RL14541

Summary of Key Performance Indicators for the First 15 Years of Program

Project	Key Performance Indicator
Priority A: Ensure a Safe, Reliable Water Supply	
A1 Pacheco Reservoir Expansion	1. Provide a portion of funds, up to $10 million, to help construct the Pacheco Reservoir Expansion Project.
A2 Water Conservation Rebates and Programs	1. Award up to $1 million per year toward specified water conservation program activities, including rebates, technical assistance and public education within the first seven (7) years of the Program.
A3 Pipeline Reliability	1. Install four (4) new line valves on treated water distribution pipelines.

Project	Key Performance Indicator
Priority B: Reduce Toxins, Hazards, and Contaminants in Our Waterways	
B1 Impaired Water Bodies Improvement	1. Investigate, develop and implement actions to reduce methylmercury in fish and other organisms in the Guadalupe River Watershed. 2. Prepare and update a plan for the prioritization of surface water quality improvement activities, such as addressing trash and other pollutants. 3. Implement at least two (2) priority surface water quality improvement activities identified in the plan per 5-year implementation period.
B2 Inter-Agency Urban Runoff Program	1. Address trash in creeks by maintaining trash capture devices or other litter control programs. 2. Maintain Valley Water's municipal stormwater compliance program and partner with cities to address surface water quality improvements, including participation in at least three (3) countywide, regional or statewide stormwater program committees to help guide regulatory development, compliance, and monitoring. 3. Support at least one (1) stormwater quality improvement activity per 5-year implementation period in Santa Clara County, including providing up to $1.5 million over 15 years to support implementation of green stormwater infrastructure consistent with Santa Clara Basin and South County Stormwater Resource Plans.
B3 Hazardous Materials Management and Response	1. Respond to 100% of hazardous materials reports requiring urgent on-site inspection in two (2) hours or less.
B4 Support Volunteer Cleanup Efforts	1. Fund Valley Water's creek stewardship program to support volunteer cleanup activities such as annual National River Cleanup Day, California Coastal Cleanup Day, the Great American Litter Pick Up; and the Adopt-A-Creek Program.

Project	Key Performance Indicator
Priority C: Protect Our Water Supply and Dams from Earthquakes and Other Natural Disasters	
C1 Anderson Dam Seismic Retrofit	1. Provide portion of funds, up to $54.1 million, to help restore full operating reservoir capacity of 90,373 acre-feet.

Project	Key Performance Indicator
Priority D: Restore Wildlife Habitat and Provide Open Space	
D1 Management of Riparian Planting and Invasive Plant Removal	1. Maintain a minimum of 300 acres of riparian planting projects annually to meet regulatory requirements and conditions. 2. Maintain a minimum of 200 acres of invasive plant management projects annually to meet regulatory requirements and conditions. 3. Remove 25 acres of Arundo donax throughout the county over a 15-year period.
D2 Revitalize Riparian, Upland and Wetland Habitat	1. Revitalize at least 21 acres over a 15-year period through native plant revegetation and/or removal of invasive exotic species. 2. Develop an Early Detection and Rapid Response Program Manual. 3. Identify and treat at least 100 occurrences of emergent invasive species over a 15-year period, as identified through the Early Detection and Rapid Response Program. 4. Develop at least eight (8) information sheets for Early Detection of Invasive Plant Species.
D3 Sediment Reuse to Support Shoreline Restoration	1. Maintain partnership agreements to reuse sediment to improve the success of salt pond and tidal marsh restoration projects and activities. 2. Provide up to $4 million per 15-year period to support activities necessary for sediment reuse.
D4 Fish Habitat and Passage Improvement	1. Complete planning and design for one (1) creek/lake separation. 2. Construct one (1) creek/lake separation project in partnership with local agencies. 3. Use $8 million for fish passage improvements by June 30, 2028. 4. Update study of all major steelhead streams in the county to identify priority locations for fish migration barrier removal and installation of large woody debris and gravel as appropriate. 5. Complete five (5) habitat enhancement projects based on studies that identify high priority locations for large wood, boulders, gravel, and/or other habitat enhancement features.
D5 Ecological Data Collection and Analysis	1. Reassess and track stream ecological conditions and habitats in each of the county's five (5) watersheds every 15 years. 2. Provide up to $500,000 per 15-year period toward the development and updates of five (5) watershed plans that include identifying priority habitat enhancement opportunities in Santa Clara County.
D6 Restoration of Natural Creek Functions	1. Construct the Hale Creek Enhancement Pilot Project, which includes restoration and stabilization of a 650-foot section of concrete-lined channel on Hale Creek, between Marilyn Drive and North Sunshine Drive on the border of Mountain View and Los Altos. 2. Construct the Bolsa Road Fish Passage Project along 1,700 linear feet of Uvas-Carnadero Creek in unincorporated Santa Clara County, which includes geomorphic design features that will restore stability and stream function. 3. Identify, plan, design, and construct a third geomorphic-designed project to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.

Priority D: Restore Wildlife Habitat and Provide Open Space cont…	
D7 Partnerships for the Conservation of Habitat Lands	1. Provide up to $8 million per 15-year period for the acquisition or enhancement of property for the conservation of habitat lands.

Project	Key Performance Indicator
Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways	
E1 Coyote Creek Flood Protection, Montague Expressway to Tully Road – San Jose	1. Construct flood protection improvements along Coyote Creek between Montague Expressway and Tully Road to provide protection from floods up to the level that occurred on February 21, 2017, approximately a 5% (20-year) flood event.
E2 Sunnyvale East and Sunnyvale West Channels Flood Protection, San Francisco Bay to Inverness Way and Almanor Avenue – Sunnyvale	1. Provide 1% (100-year) flood protection for 1,618 properties and 47 acres (11 parcels) of industrial land, while improving stream water quality and working with other agencies to incorporate recreational opportunities.
E3 Lower Berryessa Flood Protection, including Tularcitos and Upper Calera Creeks (Phase 3) – Milpitas	1. With local funding only: Complete the design phase of the 1% (100-year) flood protection project to protect an estimated 1,420 parcels.
E4 Upper Penitencia Creek Flood Protection, Coyote Creek to Dorel Drive – San Jose	1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 8,000 parcels. 2. With local funding only: Construct a 1% (100-year) flood protection project from Coyote Creek confluence to Capital Avenue to provide 1% (100-year) flood protection to 1,250 parcels, including the new Berryessa BART station.
E5 San Francisquito Creek Flood Protection, San Francisco Bay to Upstream of Highway 101 – Palo Alto	1. Preferred project with federal, state and local funding: Protect more than 3,000 parcels by providing 1% (100-year) flood protection. 2. With state and local funding only: Protect approximately 3,000 parcels by providing 1% (100-year) flood protection downstream of Highway 101, and approximately 1.4% (70-year) protection upstream of Highway 101.

Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways cont…	
E6 Upper Llagas Creek Flood Protection, Buena Vista Avenue to Llagas Road – Morgan Hill, San Martin, Gilroy	1. Preferred project with federal and local funding: Plan, design and construct flood protection improvements along 13.9 miles of Upper Llagas Creek from Buena Vista Avenue to Llagas Road to provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat. 2. With local funding only: Construct flood protection improvements along Llagas Creek from Buena Vista Avenue to Highway 101 in San Martin (Reaches 4 and 5 (portion)), Monterey Road to Watsonville Road in Morgan Hill (Reach 7a), approximately W. Dunne Avenue to W. Main Avenue (portion of Reach 8), and onsite compensatory mitigation at Lake Silveira.
E7 San Francisco Bay Shoreline Protection – Milpitas, Mountain View, Palo Alto, San Jose, Santa Clara, and Sunnyvale	1. Provide portion of the local share of funding for planning, design and construction phases for the Santa Clara County shoreline area, EIAs 1-4. 2. Provide portion of the local share of funding for planning and design phases for the Santa Clara County shoreline area, EIAs 5-9.
E8 Upper Guadalupe Flood Protection, Highway 280 to Blossom Hill Road – San Jose	1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 6,280 homes, 320 businesses and 10 schools and institutions. 2. With local funding only: Construct flood protection improvements along 4,100 feet of Guadalupe River between the Southern Pacific Railroad (SPRR) crossing, downstream of Willow Street, to the Union Pacific Railroad (UPRR) crossing, downstream of Padres Drive, and provide gravel augmentation along approximately 800 linear feet of the Upper Guadalupe River in San Jose, from approximately the Union Pacific Railroad Bridge to West Virginia Street Bridge to improve aquatic habitat for migrating steelhead and channel stability.

Project	Key Performance Indicator
Priority F: Support Public Health and Public Safety for Our Community	
F1 Vegetation Control and Sediment Removal for Capacity	1. Maintain completed flood protection projects for flow conveyance.
F2 Emergency Response Planning and Preparedness	1. Coordinate with local municipalities to merge Valley Water-endorsed flood emergency processes with their own emergency response plans and processes. 2. Complete five (5) flood management plans/procedures per 5-year period, selected by risk priorities. 3. Train Valley Water staff and partner municipalities annually on disaster procedures via drills and exercises before testing the plans and procedures. 4. Test flood management plans/procedures annually to ensure effectiveness.
F3 Flood Risk Assessment Studies	1. Complete engineering studies on three (3) creek reaches to address 1% (100-year) flood risk. 2. Annually, update floodplain maps on a minimum of three (3) creek reaches in accordance with new FEMA standards.

Priority F: Support Public Health and Public Safety for Our Community cont…	
F4 Vegetation Management for Access and Fire Safety	1. Provide vegetation management for access and fire risk reduction on an average of 495 acres per year, totaling 7,425 acres along levee, property lines and maintenance roads over a 15-year period.
F5 Good Neighbor Program: Encampment Cleanup	1. Perform 300 annual cleanups to reduce the amount of trash and pollutants entering the streams. 2. Provide up to $500,000 per year in cost-share with other agencies for services related to encampment cleanups, including services supporting staff safety, discouraging re-encampments along waterways or addressing the homelessness crisis with the goal of reducing the need for encampment cleanups.
F6 Good Neighbor Program: Graffiti and Litter Removal and Public Art	1. Cleanup identified trash and graffiti hotspots at approximately 80 sites four (4) times per year. 2. Respond to requests on litter or graffiti cleanup within five (5) working days. 3. Provide up to $1.5 million over 15 years to implement public art projects on Valley Water property and infrastructure.
F7 Emergency Response Upgrades	1. Maintain existing capabilities for flood forecasting and warning. 2. Improve flood forecast accuracy and emergency response time working with the National Weather Service and through research and development.
F8 Sustainable Creek Infrastructure for Continued Public Safety	1. Provide up to $7.5 million in the first 15-year period to plan, design and construct projects identified through Watersheds asset management plans.
F9 Grants and Partnerships for Safe, Clean Water, Flood Protection and Environmental Stewardship	1. Provide a grant and partnership cycle each year for projects related to safe, clean drinking water, flood protection and environmental stewardship. 2. Provide annual funding for bottle filling stations to increase drinking water accessibility, with priority for installations in economically disadvantaged communities and locations that serve school-age children and students. 3. Provide annual mini-grant funding opportunity for projects related to safe, clean drinking water, flood protection and environmental stewardship. 4. Provide up to $3 million per 15-year period for partnerships with small municipalities (defined as under 50,000 people in the most recent census available), or special districts with boundaries substantially within the footprint of small cities, for projects aligned with the District Act and related to safe, clean drinking water, flood protection and environmental stewardship.

Providing for the Continuation and Levy of a Special Tax to Pay the Cost of the Safe, Clean Water and Natural Flood Protection Program in the Combined Flood Control Zone of the Santa Clara Valley Water District Subject, Nevertheless, to Specified Limits and Conditions
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ATTACHMENT 3
COVERSHEET

FIGURE 1
ACTUAL FY 2019–20 AND ACTUAL FY 2020–21 SAFE, CLEAN WATER AND NATURAL FLOOD PROTECTION SPECIAL TAX RATES

No. of Pages: 1

Additional Items: None.

RL14541

FIGURE 1
Actual FY 2019–20 and Actual FY 2020–21
Safe, Clean Water and Natural Flood Protection Special Tax Rates

Land Use Categories	Actual FY '19-20	Actual FY '20-21
A - Commercial, Industrial		
Rate ($/Acre)	$541.60	$541.60
Minimum Assessment (1)	$135.39	$135.39
B - Apartment, Schools, Churches, Condominiums & Townhouse		
Rate ($/Acre)	$406.20	$406.20
Minimum Assessment (1)	$101.55	$101.55
Condominiums & Townhouses ($/unit)	$32.95	$32.95
C - Single Family Residential, Small Multiples (2-4 units) (2)		
Minimum Assessment (1)	$67.67 (Averaging $0.006 per square foot)	$67.67 (Averaging $0.006 per square foot)
D - Utilized Agriculture(2)		
Rate ($/Acre)	$3.47	$3.47
Minimum Assessment (1)	$34.70	$34.70
E - Urban - Nonutilized Agricultural, Grazing Land, Salt Ponds, Well Site in Urban Areas		
Rate ($/Acre)	$1.02	$1.02
Minimum Assessment (1)	$10.23	$10.23
E - Rural - Nonutilized Agricultural, Grazing Land, Well Sites in Rural Areas		
Rate ($/Acre)	$0.14	$0.14
Minimum Assessment (1)	$10.23	$10.23

(1) The minimum assessments shown for Categories A, B, and C apply to parcels 1/4 acre or less in size. Category C parcels larger than 1/4 acre pay the minimum assessment for the first 1/4 acre and the remaining acreage is assessed at the Category D rate. For Category D, the minimum assessment applies to parcels less than 10 acres. The minimum assessment for Group E parcels is the amount charged for 10 acres of urban undeveloped land; the minimum assessment is the same for both the Urban Category and the Rural Category parcels, however the Rural Category applies to parcels of 80 acres or less.

(2) Residential land in excess of 1/4 acre is assessed at the "D" rate.

Endorsements

APPENDIX B

TO DATE, THE FOLLOWING ORGANIZATIONS HAVE INDICATED SUPPORT FOR THE PROPOSED RENEWAL. (ADDITIONAL ENDORSERS MAY BE ADDED ONCE CONFIRMED.)

AACI (Asian Americans for Community Involvement)

California Water Service (Cal Water)

City of Monte Sereno

City of Campbell

City of Palo Alto

City of Sunnyvale

Cupertino Chamber of Commerce

Friends of Five Wounds Trail

Guadalupe River Park Conservancy

Hispanic Chamber of Commerce, Silicon Valley

IFPTE Local 21 representing ES and PMA

La Raza Roundtable de California

Midpeninsula Regional Open Space District (Midpen)

Milpitas Chamber of Commerce

Morgan Hill Chamber of Commerce

Rotary District 5170

Santa Clara County Farm Bureau

San Francisquito Creek Joint Powers Authority

San Francisco Estuary Institute (SFEI)

San Jose Councilmember Maya Esparza, District 7

San Jose Councilmember Sergio Jimenez, District 2

San Jose Vice Mayor Chappie Jones

San Jose/Silicon Valley NAACP

San Jose Water Company

Santa Clara Unified Board of Education Board Member Albert Gonzalez

Santa Clara Valley Habitat Agency

Silicon Valley Black Chamber of Commerce

Sunnyvale Silicon Valley Chamber of Commerce

The River Church Community

Town of Los Altos Hills

UA Local Union 393

Valley Water Employees Association, AFSCME Council 57

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Glossary

APPENDIX C

1% flood

A flood that has a 1% chance of occurring in any given year; also referred to as a 100-year flood.

50-year flood

A flood that has a 2% chance of occurring in any given year.

100-year flood

A flood that has a chance of occurring an average of once every 100 years; also referred to as a 1% flood.

Acre-feet (AF)

An acre-foot of water would cover 1 acre of land to a depth of 1 foot. 1 acre-foot equals approximately 325,000 gallons, the average amount of water used by 2 families of 5 in 1 year.

Aquifer

An underground geologic formation of rock, soil, or sediment that is saturated with water; an aquifer stores groundwater.

Backwater Effect

The effect which a dam or other obstruction has in raising the surface of the water upstream from it.

Bypass channel

A channel built to carry excess water from a stream or to divert water from the main channel and then return the water to the channel at a point further downstream.

Trash capture devices

Innovative devices used to capture wastes and trash in bodies of water and on land. Comprise of nets and sharp implements which can snare waste items.

Cleanup

The removal of trash and debris resulting from encampments; by Valley Water or by Valley Water in coordination with other agencies.

Ecosystem

An ecological community of plants, animals, and microorganisms in their environment, functioning together as a unit.

Glossary

APPENDIX C

Ecotone

Transition area between two differing ecological spaces. Retains some of the characteristics of each respective ecological space, yet contains species not typically found in either environment.

Encampment (homeless)

1 or more structures occupied by an individual or family that is located illegally on Valley Water or other public property. An area where there are no structures, but where personal property is stored is also considered an encampment.

Environmental enhancement

Action taken by Valley Water that benefits the environment, is not mitigation and is undertaken voluntarily. Enhancement actions may include environmental preservation or creation. In instances where enhancements are located in the same vicinity as a mitigation project, actions must exceed required compliance activities to be considered environmental enhancements.

Erosion

The process by which soil is removed from a place by forces such as water or construction activity, and eventually deposited at a new place as sediment.

Fiscal year (FY)

A period that a company or government uses for accounting purposes and preparing financial statements. The fiscal year may or may not be the same as a calendar year. Valley Water uses a fiscal year that begins on July 1 and ends on June 30, which coincides with the State of California's fiscal year. The fiscal year is denoted by the year in which it ends, so spending incurred on November 14, 2015, would belong to fiscal year 2016. The federal government's fiscal year begins on October 1 and ends on September 30.

Fisheries

An area with an associated fish or aquatic population.

Fish passage

A generic term for several methods incorporated into flood protection or other stream modification projects which allow native fish species to travel upstream to spawn.

Flood

A temporary inundation of inland or tidal waters onto normally dry land areas.

Flood conveyance capacity

The maximum amount of water that can flow through a channel, stream or culvert before there is flooding of surrounding properties.

Glossary

APPENDIX C

Floodplain

The low, flat, periodically flooded lands adjacent to creeks and rivers.

Floodplain management

A city or county program of corrective, preventive and regulatory measures to reduce flood damage and encourage the natural and beneficial functions of floodplains. Careful local management of development in the floodplains results in construction practices that can reduce flood damages.

Floodwall

Walls used as levees to contain floodwaters within a stream. Floodwalls are used when right-of-way is limited.

Geomorphology/geomorphic

The study of the natural relationship between a stream and its bank and bed; pertaining to those processes that affect the form or shape of the surface of the earth, including creeks and streams.

Groundwater

Water that is found beneath the surface in small pores and cracks in the rock and substrate.

Gravel Augmentation

Gravel augmentation or gravel replenishment means artificially adding gravel suitable in size distribution for salmon and steelhead trout habitat enhancement including spawning and fry emergence to streambeds that lacks such gravel, typically due to upstream impoundments.

Habitat

The specific, physical location or area in which a particular type of plant or animal lives. To be complete, an organism's habitat must provide all of the basic requirements of life for that organism.

Impaired water bodies

Waters that are too polluted or otherwise degraded to meet the water quality standards set by the State of California. Under the federal Clean Water Act, California is required to develop lists of impaired water bodies, including creeks, streams, and lakes.

Invasive plants

A non-native plant species that has spread into native or minimally managed plant communities (habitats).

Large woody debris (LWD)

The logs, sticks, branches, and other wood that falls into streams and rivers. This debris can influence the flow and shape of the stream channel. LWD plays an important biological role in streams by increasing channel complexity, enhancing fish habitat, and creating diversity in the food web.

Glossary

APPENDIX C

Levee

An embankment constructed to provide flood protection from seasonal high water.

Methylmercury

An organic, highly toxic form of mercury that easily bioaccumulates in organisms, increasing in concentration as it travels up the food chain. Because of mercury contamination the public is advised against consuming fish caught in some Santa Clara County reservoirs and ponds.

Mitigation

Action taken to fulfill CEQA/NEPA, permit requirements and court-mandates to avoid, minimize, rectify or reduce adverse environmental impacts, or compensate for the impact(s) by replacing or providing substitute resources or environments.

Natural flood protection

A multiple-objective approach to providing environmental quality, community benefit and protection from creek flooding in a cost-effective manner through integrated planning and management that considers the physical, hydrologic and ecologic functions and processes of streams within the community setting.

Oxygenation treatment systems

Treatment systems that help increase the relative oxygen levels in a body of water.

Pay-as-you-go

A funding mechanism which collects revenue until sufficient funds are available to begin construction of a project, in contrast to debt financing, in which a large sum is borrowed so that construction can begin sooner.

Permitting requirements

A mechanism used to enforce state and federal laws that protect environmentally sensitive areas. Before moving forward on projects, Valley Water is required to obtain permits from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, NOAA Fisheries, Regional Water Quality Control Board and the California Department of Fish and Wildlife. Each permit gives the permitting agency an opportunity to attach specific measures to the project to reduce impact on the environment.

Preservation

Action taken to protect an ecosystem or habitat area by removing a threat to that ecosystem or habitat, including regulatory actions and the purchase of land and easements.

Reach (creek)

A portion of a creek or watercourse usually defined by both an upstream and a downstream unit.

Glossary

APPENDIX C

Groundwater Recharge

The addition of new water to an aquifer or to the zone of saturation. See groundwater.

Respond

For hazardous materials response (project B3) "Responded to" means that responder arrives at site within two (2) hours. For litter and graffiti removal (project F6) "Responded to" means that a request for Valley Water action is acknowledged either verbally, in writing, or by email within five (5) working days.

Restoration/restore

Action taken by Valley Water, to the extent practicable, toward the re-establishment as closely as possible of an ecosystem's pre-disturbance structure, function, and value, where it has been degraded, damaged, or otherwise destroyed.

Revegetate

To re-establish vegetation in areas which have been disturbed by project construction.

Revitalize

Improve habitat value, particularly in an effort to connect contiguous creek reaches of higher value, by removing invasive, non-native vegetation and diseased and/or non-thriving specimens, applying mulch to suppress weed competition, revegetating sites with native plants, and installing predation prevention measures such as browse protection or cautionary fencing to reduce impacts from animals and vandals.

Riparian

Pertaining to the banks and adjacent terrestrial habitat of streams, creeks or other freshwater bodies and watercourses.

Riparian corridor

The riverside or riverine environment next to a stream channel.

Riparian ecosystem

A natural association of soil, plants and animals existing within the floodplain of a stream and dependent for their survival on high water tables and river flow.

Sediment/sedimentation

Mineral or organic material that is deposited by moving water and settles at the bottom of a waterway. Sediment in a lake, reservoir or stream can either be suspended in the water column or deposited on the bottom. Sediment usually consists of eroded material from the watershed, precipitated minerals and the remains of aquatic organisms.

Special status species

Any species that is listed or proposed for listing as threatened or endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service under the provisions of the Endangered Species Act; any species designated by the U.S. Fish and Wildlife Service as a "listed," "candidate," "sensitive," or "species of concern," and any species which is listed by the State of California in a category implying potential danger of extinction.

Special tax

Any tax imposed for specific purposes or any tax imposed by a special purpose district or agency, such as the Santa Clara Valley Water District. A special district contemplating a special tax levy must hold a noticed public hearing and adopt an ordinance or resolution prior to placing the tax on the ballot.

The ordinance or resolution must specify the purpose of the tax, the rate at which it will be imposed, the method of collection and the date of the election to approve the tax levy. Approval by a 2/3 vote of the city, county or district electorate is necessary for adoption.

State Water Resources Control Board

The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The mission of the State Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. There are 9 regional water quality control boards that exercise rulemaking and regulatory activities by basin. Santa Clara County is part of 2 regions: Region 2 - San Francisco Regional Water Quality Control Board (north of Morgan Hill) and Region 3 - Central Coast Regional Water Quality Control Board (south of Morgan Hill).

Subvention

Subventions are reimbursements for rights-of-way and relocation costs of channel improvements and levee projects provided to flood control agencies by the Department of Water Resources Flood Subventions Program.

Environmental Stewardship

To entrust the careful and responsible management of the environment and natural resources to one's care for the benefit of the greater community.

Stream Maintenance Program (SMP)

Ensures flood protection projects continue to function as designed to protect homes and businesses along Valley Water streams. SMP work includes removal of sediment, management of vegetation, clearing of trash and debris, stabilization of eroded riverbanks over portions of 278 miles of creeks in Santa Clara County.

Threatened species

A species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Glossary

APPENDIX C

Total Maximum Daily Loads (TMDLs)

The maximum pollutant load a waterbody can receive (loading capacity) without violating water quality standards.

Urban runoff

The water that runs over the impervious areas in cities, collecting pollutants as it flows. Runoff is recognized as a major source of water impairment.

Valley Water 1% Flood Risk Zone

Per Valley Water modeling, this is the area representing parcels that have a 1% chance of experiencing flooding, including less than 1 foot, in any given year.

Watershed

Land area from which water drains into a major body of water.

Watershed stewardship

Protecting and enhancing the county's creeks, streams and water bodies to preserve a vibrant, healthy ecosystem and provide recreational opportunities when appropriate.

Wetland

Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation adapted for life in saturated soil conditions, as well as the diverse wildlife species that depend on this habitat.

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Special Tax Rate Structure APPENDIX D

How the special tax is calculated

The rate structure for calculating the proposed special tax is identical to the Clean, Safe Creeks and Natural Flood Protection structure that it will replace. It is intended to be an equitable basis for the rate structure and is applied consistently throughout the county. Rates are based on the land use (which is directly related to an assigned storm water runoff factor or can be thought of as the estimated percent of hardscape area on a parcel) and size of each land parcel. The six land use categories, their estimated stormwater runoff factors, and the special tax calculation formula are described in detail below. The FY 2022 parcel tax rates by land use category may be escalated by the greater of CPI or 2% relative to the FY 2021 rates shown in Figure 1 on page A.15.

Land use categories and estimated stormwater runoff factors

The following six land use categories and estimated stormwater runoff factors will be used to determine the proposed special tax:

CATEGORY A: COMMERCIAL AND INDUSTRIAL PARCELS

1. Land used for industrial and commercial purposes. This land use is assigned an estimated stormwater runoff factor of 0.8.
2. The minimum tax for this category is applied to parcels of 1/4 acre or less.

CATEGORY B: HIGH-DENSITY RESIDENTIAL PARCELS, SCHOOLS, CHURCHES, AND INSTITUTIONS

1. Land used for apartment complexes, mobile home parks, condominiums, townhouses, or institutional purposes such as schools and churches. This land use is assigned an estimated stormwater runoff factor of 0.6.
2. With the exception of condominiums and townhouses, the minimum tax for this category is applied to parcels of 1/4 acre or less.
3. For condominiums and townhouses, an average lot size of 0.08 acre for each condominium or townhouse will be used to calculate the annual special tax rate.

CATEGORY C: SINGLE-FAMILY RESIDENCES AND MULTIPLE-FAMILY UNITS UP TO 4 UNITS

1. Land used for single-family residences and multiple-family units up to four units. This land use is assigned an estimated storm water runoff factor of 0.4.
2. The minimum tax for this category is applied to parcels of 1/4 acre or less. Incremental residential land in excess of 1/4 acre is assessed at the Category D rate.

CATEGORY D: AGRICULTURAL PARCELS

1. Disturbed agricultural land, including irrigated land, orchards, dairies, field crops, golf courses, and similar uses. This land use is assigned an estimated stormwater runoff factor of 0.005.
2. The minimum tax for this category is applied to parcels of 10 acres or less.
3. The per acre rate for this category shall be used for any portion of land in Category C that is in excess of 1/4 acre of a parcel used for single-family residential purposes.

CATEGORY E: NON-UTILIZED AGRICULTURAL PARCELS

1. Urban: Non-utilized agricultural lands, grazing land, salt ponds, undisturbed vacant lands, and parcels used exclusively as well sites for commercial purposes that are located in urban areas.

2. Rural: Non-utilized agricultural land, grazing land, undisturbed vacant land, and parcels used exclusively as well sites for commercial purposes that are located in rural areas.
3. This land use is assigned an estimated storm water runoff factor of 0.0015. The minimum tax for this category is applied to parcels of 10 acres or less. The minimum tax is the same for E-Urban and E-Rural categories. However, for the E-Rural category, incremental lands in excess of 10 acres will be assessed at 1/8 the E-Urban rate.

   The 1/8 factor was used because most rangelands in rural areas are either under the Williamson Act contracts, which limit their development potential, or they are located upstream of a District reservoir and impose less potential for flooding downstream. Additionally, the County Assessor's Office had advised that taxes on rangelands are on the average 1/8 of what they would be without Williamson Act provisions.

CATEGORY F: WELL PARCELS FOR RESIDENTIAL USES

Parcels used exclusively as well sites for residential uses are exempt from the special tax.

Land use codes assigned to parcels by the County Assessor's Office will be grouped into the above six land use categories for determining the annual special tax for each parcel.

Special tax calculation formula

The special tax for each land use category will continue at the annually adjusted rate as established under the Clean, Safe Creeks and Natural Flood Protection measure, using the ratio of the runoff factor of each land use category to the runoff factor of Category C.

EXAMPLE CALCULATION

If the minimum special tax (for parcels less than 1/4 acre) was set at $67.67/year for Category C, Single-Family Residences, the special tax (for a one-acre parcel) in Category A, Commercial and Industrial Parcels, can be calculated using the stormwater runoff factors for Category C, Residential, and Category A, Commercial/Industrial, as follows:

$67.67 /year per 1/4 acre x (0.8 / 0.4) = $541.36 /year per acre

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
Priority A: Ensure a Safe, Reliable Water Supply						
A1	Pacheco Reservoir Expansion	Increase the operational capacity of Pacheco Reservoir from 5,500 acre-feet to up to 140,000 acre-feet to reduce the frequency and severity of water shortages during droughts, protect our drinking water supply and infrastructure, and improve habitat for fish.	1. Provide a portion of funds, up to $10 million, to help construct the Pacheco Reservoir Expansion Project.	$1.3 B	$10.0 M	<1%
A2	Water Conservation Rebates and Programs	Meet long-term water conservation and reliability goals by increasing water-use efficiency in the landscape, residential, schools and commercial sectors through water conservation rebates, technical assistance and public education.	1. Award up to $1 million per year toward specified water conservation program activities, including rebates, technical assistance and public education for the first seven (7) years of the program.	$51.3 M	$7.9 M	15%
A3	Pipeline Reliability	Construct four (4) line valves on treated water distribution pipelines. The line valves will allow Valley Water to isolate sections of pipelines for maintenance and repairs following a catastrophic event such as a major earthquake, allowing Valley Water to maintain deliveries to customers, even if there is damage to individual segments.	1. Install 4 (four) new line valves on treated water distribution pipelines.	$11.9 M	$9.8 M	82%
Priority B: Reduce Toxins, Hazards, and Contaminants in Our Waterways						
B1	Impaired Water Bodies Improvement	Reduce pollutants in streams, reservoirs and groundwater of Santa Clara County by supporting surface water quality pollution prevention activities.	1. Investigate, develop and implement actions to reduce methylmercury in fish and other organisms in the Guadalupe River Watershed. 2. Prepare and update a plan for the prioritization of surface water quality improvement activities, such as addressing trash and other pollutants. 3. Implement at least two (2) priority surface water quality improvement activities identified in the plan per 5-year implementation period.	$32.8 M	$32.8 M	100%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
B2	Inter-Agency Urban Runoff Program	Maintain Valley Water compliance with regulatory requirements for stormwater quality and support green stormwater infrastructure.	1. Address trash in creeks by maintaining trash capture devices or other litter control programs. 2. Maintain Valley Water's municipal stormwater compliance program and partner with cities to address surface water quality improvements, including participation in at least three (3) countywide, regional or statewide stormwater program committees to help guide regulatory development, compliance, and monitoring. 3. Support at least one (1) stormwater quality improvement activity per 5-year implementation period in Santa Clara County, including providing up to $1.5 million over 15 years to support implementation of green stormwater infrastructure consistent with Santa Clara Basin and South County Stormwater Resource Plans.	$45.2 M	$19.8 M	44%
B3	Hazardous Materials Management and Response	Protect streams, groundwater and reservoirs from hazardous material releases.	1. Respond to 100% of hazardous materials reports requiring urgent on-site inspection in two (2) hours or less.	$4.2 M	$1.1 M	26%
B4	Support Volunteer Cleanup Efforts	Support volunteer cleanup activities and creekwise education.	1. Fund Valley Water's creek stewardship program to support volunteer cleanup activities such as annual National River Cleanup Day, California Coastal Cleanup Day, the Great American Litter Pick Up; and the Adopt-A-Creek Program.	$9.2 M	$5.1 M	55%
Priority C: Protect Our Water Supply and Dams from Earthquakes and Other Natural Disasters						
C1	Anderson Dam Seismic Retrofit	Bring Anderson dam into compliance with today's seismic standards to ensure public safety and to restore lost reservoir storage capacity resulting from seismic concerns.	1. Provide portion of funds, up to $54.1 million, to help restore full operating reservoir capacity of 90,373 acre-feet.	$576.3 M	$54.1 M	9%
Priority D: Restore Wildlife Habitat and Provide Open Space						
D1	Management of Riparian Planting and Invasive Plant Removal	Manage at least 300 acres of existing riparian planting projects and 200 acres of invasive plant removal projects countywide. Maintain future similar projects anticipated due to upcoming environmental mitigation requirements and carry out targeted control of damaging non-native invasive plant species.	1. Maintain a minimum of 300 acres of riparian planting projects annually to meet regulatory requirements and conditions. 2. Maintain a minimum of 200 acres of invasive plant management projects annually to meet regulatory requirements and conditions. 3. Remove 25 acres of Arundo donax throughout the county over a 15-year period.	$118.8 M	$68.9 M	58%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
D2	Revitalize Riparian, Upland and Wetland Habitat	Improve habitat for rare, threatened or endangered species or vegetation, and create a more contiguous corridor for wildlife, including pollinators.	1. Revitalize at least 21 acres over a 15-year period through native plant revegetation and/or removal of invasive exotic species. 2. Develop an Early Detection and Rapid Response Program Manual. 3. Identify and treat at least 100 occurrences of emergent invasive species over a 15-year period, as identified through the Early Detection and Rapid Response Program. 4. Develop at least eight (8) information sheets for Early Detection of Invasive Plant Species.	$8.1 M	8.1 M	100%
D3	Sediment Reuse to Support Shoreline Restoration	Reuse local sediment from Valley Water's stream maintenance activities and capital projects to create and restore tidal marsh habitat.	1. Maintain partnership agreements to reuse sediment to improve the success of salt pond and tidal marsh restoration projects and activities. 2. Provide up to $4 million per 15-year period to support activities necessary for sediment reuse.	$4.1 M	$4.1 M	100%
D4	Fish Habitat and Passage Improvement	Restore and maintain healthy fish populations, especially steelhead, by improving fish passage and habitat.	1. Complete planning and design for one (1) creek/lake separation. 2. Construct one (1) creek/lake separation project in partnership with local agencies. 3. Use $8 million for fish passage improvements by June 30, 2028. 4. Update study of all major steelhead streams in the county to identify priority locations for fish migration barrier removal and installation of large woody debris and gravel as appropriate. 5. Complete five (5) habitat enhancement projects based on studies that identify high priority locations for large wood, boulders, gravel and/or other habitat enhancement features.	$51.1 M	$44.1 M	86%
D5	Ecological Data Collection and Analysis	Track stream ecosystem conditions to help Valley Water and other county organizations make informed watershed, asset management and natural resource decisions.	1. Reassess and track stream ecological conditions and habitats in each of the county's five (5) watersheds every 15 years. 2. Provide up to $500,000 per 15-year period toward the development and updates of five (5) watershed plans that include identifying priority habitat enhancement opportunities in Santa Clara County.	$11.0 M	$7.5 M	68%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
D6	Restoration of Natural Creek Functions	Restore and improve natural functions and stability of stream channels, by designing and constructing projects based on local hydrologic and geomorphic data.	1. Construct the Hale Creek Enhancement Pilot Project, which includes restoration and stabilization of a 650-foot section of concrete-lined channel on Hale Creek, between Marilyn Drive and North Sunshine Drive on the border of Mountain View and Los Altos. 2. Construct the Bolsa Road Fish Passage Project along 1,700 linear feet of Uvas-Carnadero Creek in unincorporated Santa Clara County, which includes geomorphic design features that will restore stability and stream function. 3. Identify, plan, design, and construct a third geomorphic designed project to restore stability and stream function by preventing incision and promoting sediment balance throughout the watershed.	$19.6 M	$14.5 M	74%
D7	Partnerships for the Conservation of Habitat Lands	Acquire, restore and protect important habitat land to preserve local ecosystems through multi-agency agreements that pool mitigation or conservation dollars.	1. Provide up to $8 million per 15-year period for the acquisition or enhancement of property for the conservation of habitat lands.	$8.0 M	$8.0 M	100%
Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways						
E1	Coyote Creek Flood Protection	Plan, design and construct improvements along approximately nine (9) miles of Coyote Creek, between Montague Expressway and Tully Road, in San José, to provide protection from floods up to the level that occurred on February 21, 2017.	1. Construct flood protection improvements along Coyote Creek between Montague Expressway and Tully Road to provide protection from floods up to the level that occurred on February 21, 2017, approximately a 5% (20-year) flood event.	$80.8 M	$41.8 M	52%
E2	Sunnyvale East and Sunnyvale West Channels Flood Protection	Upgrade approximately 6.4 miles of the existing Sunnyvale East Channel to provide 1% flood protection for 1,618 parcels and approximately three (3) miles of the existing West Channel to provide 1% flood protection for 47 acres of highly valuable industrial land.	1. Provide 1% (100-year) flood protection for 1,618 properties and 47 acres (11 parcels) of industrial land, while improving stream water quality and working with other agencies to incorporate recreational opportunities.	$70.4 M	$33.0 M	47%
E3	Lower Berryessa Flood Protection, including Tularcitos and Upper Calera Creeks (Phase 3)	Provide 1% flood protection for approximately 1,100 parcels affected by Upper Calera Creek from the drop structure upstream of Arizona Avenue upstream to Jose Hugera Adobe Park, and to an estimated 320 parcels along Tularcitos Creek between its confluence with Berryessa Creek and Interstate 680.	1. With local funding only: Complete the design phase of the 1% (100-year) flood protection project to protect an estimated 1,420 parcels.	$71.2 M	$8.2 M	11.5%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
E4	Upper Penitencia Creek Flood Protection	Plan, design and construct improvements along 4.2 miles of Upper Penitencia Creek from its confluence with Coyote Creek to Dorel Drive. This multi-objective project will also provide ecological restoration and recreation benefits while preserving water supply infrastructure.	1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 8,000 parcels. 2. With local funding only: Construct a 1% (100-year) flood protection project from Coyote Creek confluence to Capital Avenue to provide 1% (100-year) flood protection to 1,250 parcels, including the new Berryessa BART station.	$67.0 M	$20.4 M	30%
E5	San Francisquito Creek Flood Protection	Construct improvements along San Francisquito Creek from San Francisco Bay to upstream of Highway 101 for flood protection, ecosystem protection and recreational benefits, in partnership with the San Francisquito Creek Joint Powers Authority and the U.S. Army Corps of Engineers.	1. Preferred project with federal, state and local funding: Protect more than 3,000 parcels by providing 1% (100-year) flood protection. 2. With state and local funding only: Protect approximately 3,000 parcels by providing 1% (100-year) flood protection downstream of Highway 101, and approximately 1.4% (70-year) flood protection upstream of Highway 101.	$89.3	$31.5 M*	35%
E6	Upper Llagas Creek Flood Protection	Design and construct flood protection improvement along 13.9 miles of Upper Llagas Creek to provide flood protection and improve stream habitat benefiting areas of Morgan Hill, Gilroy and San Martin.	1. Preferred project with federal and local funding: Plan, design and construct flood protection improvements along 13.9 miles of Upper Llagas Creek from Buena Vista Avenue to Llagas Road to provide flood protection to 1,100 homes, 500 businesses, and 1,300 agricultural acres, while improving stream habitat. 2. With local funding only: Construct flood protection improvements along Llagas Creek from Buena Vista Avenue to Highway 101 in San Martin (Reaches 4 and 5 (portion)), Monterey Road to Watsonville Road in Morgan Hill (Reach 7a), approximately W. Dunne Avenue to W. Main Avenue (portion of Reach 8), and onsite compensatory mitigation at Lake Silveira.	$285.0 M	$46.3 M	16%
E7	San Francisco Bay Shoreline Protection	Provide tidal flood protection, restore and enhance tidal marsh and related habitats, and provide recreational and public access opportunities in partnership with the California State Coastal Conservancy, the U.S. Army Corps of Engineers and regional stakeholders.	1. Provide portion of the local share of funding for planning, design and construction phases for the Santa Clara County shoreline area, EIAs 1-4. 2. Provide portion of the local share of funding for planning and design phases for the Santa Clara County shoreline area, EIAs 5-9.	$400.0 M	$46.0 M	12%

* In conjunction with the San Francisquito Creek Joint Powers Authority, Valley Water is seeking $20 million from partnership contributions and/or Continuing Authorities Program Section 205 funding from the U.S. Army Corps of Engineers to help mitigate project costs shown, which would otherwise be funded from program reserves.

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
E8	Upper Guadalupe Flood Protection	Plan, design, and construct improvements along 5.5 miles of Guadalupe River extending from I-280 to Blossom Hill Road in San José to provide 1% flood protection to 6,610 homes, businesses and schools and institutions.	1. Preferred project with federal and local funding: Construct a flood protection project to provide 1% (100-year) flood protection to 6,280 homes, 320 businesses and 10 schools and institutions. 2. With local funding only: Construct flood protection improvements along 4,100 feet of Guadalupe River between the Southern Pacific Railroad (SPRR) crossing, downstream of Willow Street, to the Union Pacific Railroad (UPRR) crossing, downstream of Padres Drive, and provide gravel augmentation along approximately 800 linear feet of the Upper Guadalupe River in San Jose, from approximately the Union Pacific Railroad Bridge to West Virginia Street Bridge to improve aquatic habitat for migrating steelhead and channel stability.	$494.0 M	$35.8 M	7%
Priority F: Support Public Health and Public Safety for Our Community						
F1	Vegetation Control and Sediment Removal for Capacity	Reduce flood risk by maintaining the design conveyance capacity of flood protection projects by controlling in-stream vegetation and removing stream sediment.	1. Maintain completed flood protection projects for flow conveyance.	$213.1 M	$114.1 M	54%
F2	Emergency Response Planning and Preparedness	Coordinate and collaborate with local municipalities on flood disaster planning, mitigation, response and communication. Utilize systems developed under Project F7, Emergency Response Upgrades.	1. Coordinate with local municipalities to merge Valley Water-endorsed flood emergency processes with their own emergency response plans and processes. 2. Complete five (5) flood management plans/procedures per 5-year period, selected by risk priorities. 3. Train Valley Water staff and partner municipalities annually on disaster procedures via drills and exercises before testing the plans and procedures. 4. Test flood management plans/procedures annually to ensure effectiveness.	$7.2 M	$7.2 M	100%
F3	Flood Risk Assessment Studies	Create and update custom software models of local creeks for an accurate understanding of flood risks in priority flood-prone areas. Develop options for managing the flood risks.	1. Complete engineering studies on three (3) creek reaches to address 1% (100-year) flood risk. 2. Annually, update floodplain maps on a minimum of three (3) creek reaches in accordance with new FEMA standards.	$21.9 M	$21.9 M	100%
F4	Vegetation Management for Access and Fire Safety	Reduce fire risk and ensure access for creek maintenance by managing vegetation.	1. Provide vegetation management for access and fire risk reduction on an average of 495 acres per year, totaling 7,425 acres along levee, property lines and maintenance roads over a 15-year period.	$80.0 M	$12.0 M	15%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
F5	Good Neighbor Program: Encampment Cleanup	Coordinate with local organizations to clean up encampments near waterways to improve water quality, safety and aesthetics, including funding for park ranger and police patrols along waterways. Cooperate with local social services and nonprofit groups to help provide alternatives to homelessness.	1. Perform 300 annual cleanups to reduce the amount of trash and pollutants entering the streams. 2. Provide up to $500,000 per year in cost-share with other agencies for services related to encampment cleanups, including services supporting staff safety, discouraging re-encampments along waterways or addressing the homelessness crisis with the goal of reducing the need for encampment cleanups.	$38.7 M	$38.7 M	100%
F6	Good Neighbor Program: Graffiti and Litter Removal and Public Art	Maintain the aesthetic condition of Valley Water assets by removing trash from creeks, repairing/installing fencing and removing graffiti. Fund installation and maintenance of public art projects, such as murals, to beautify Valley Water property and infrastructure, to help deter graffiti and litter.	1. Cleanup identified trash and graffiti hotspots at approximately 80 sites four (4) times per year. 2. Respond to requests on litter or graffiti cleanup within five (5) working days. 3. Provide up to $1.5 million over 15 years to implement public art projects on Valley Water property and infrastructure.	$26.4 M	$13.1 M	50%
F7	Emergency Response Upgrades	Support ongoing development and maintenance of a robust flood forecasting system, including efficient dissemination of information to emergency responders and the public.	1. Maintain existing capabilities for flood forecasting and warning. 2. Improve flood forecast accuracy and emergency response time working with the National Weather Service and through research and development.	$13.2 M	$13.2 M	100%
F8	Sustainable Creek Infrastructure for Continued Public Safety	Ensure that existing flood protection infrastructure continues to function sustainably and provide the level of service originally intended, as climate and other conditions evolve.	1. Provide up to $7.5 million in the first 15-year period to plan, design and construct projects identified through Watersheds asset management plans.	$15.0 M	$7.5 M	50%

Safe, Clean Water Program: Project Summary with KPIs and Costs

APPENDIX E

	Project	Project Description	Key Performance Indicator	Estimated Total Project Cost	Estimated Funding from Safe, Clean Water (First 15 years of Program)	Estimated Percent Funding from Safe, Clean Water
F9	Grants and Partnerships for Safe, Clean Water, Flood Protection and Environmental Stewardship	Provide grants and partnerships for agencies, organizations and individuals for water conservation, pollution prevention, creek cleanups, education, wildlife habitat restoration and access to trails and open space.	1. Provide a grant and partnership cycle each year for projects related to safe, clean drinking water, flood protection and environmental stewardship. 2. Provide annual funding for bottle filling stations to increase drinking water accessibility, with priority for installations in economically disadvantaged communities and locations that serve school-age children and students. 3. Provide annual mini-grant funding opportunity for projects related to safe, clean drinking water, flood protection and environmental stewardship. 4. Provide up to $3 million per 15-year period for partnerships with small municipalities (defined as under 50,000 people in the most recent census available) or special districts with boundaries substantially within the footprint of small cities, for projects aligned with the District Act and related to safe, clean drinking water, flood protection and environmental stewardship.	$53.1 M	$53.1 M	100%

Safe, Clean Water Program: Schedule

APPENDIX F

	Proposed Projects	Project Schedule	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
Priority A : Ensure a Safe, Reliable Water Supply																	
A1	Pacheco Reservoir Expansion	2022 - 28															
A2	Water Conservation Rebates and Programs	2022 - 28															
A3	Pipeline Reliability	2022 - 26															
Priority B: Reduce Toxins, Hazards, and Contaminants in Our Waterways																	
B1	Impaired Water Bodies Improvement	2022 - 36															
B2	Inter-Agency Urban Runoff Program	2022 - 36															
B3	Hazardous Materials Management and Response	2022 - 36															
B4	Support Volunteer Cleanup Efforts	2022 - 36															
Priority C : Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters																	
C1	Anderson Dam Seismic Retrofit	2022 - 28															
Priority D: Restore Wildlife Habitat and Provide Open Space																	
D1	Management of Riparian Planting and Invasive Plant Removal	2022 - 36															
D2	Revitalize Riparian, Upland and Wetland Habitat	2022 - 36															
D3	Sediment Reuse to Support Shoreline Restoration	2022 - 36															
D4	Fish Habitat and Passage Improvement	2022 - 36															

Safe, Clean Water Program: Schedule

APPENDIX F

	Proposed Projects	Project Schedule	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
D5	Ecological Data Collection and Analysis	2022 - 36															
D6	Restoration of Natural Creek Functions	2022 - 36															
D7	Partnerships for the Conservation of Habitat Lands	2022 - 36															
Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets, and Highways																	
E1	Coyote Creek Flood Protection	2022 - 26															
E2	Sunnyvale East and Sunnyvale West Channels Flood Protection	2022 - 24															
E3	Lower Berryessa Flood Protection, including Tularcitos and Upper Calera Creeks (Phase 3)	2032 - 36															
E4	Upper Penitencia Creek Flood Protection	2022 - 28															
E5	San Francisquito Creek Flood Protection	2022 - 24															
E6	Upper Llagas Creek Flood Protection	2022 - 26															
E7	San Francisco Bay Shoreline Protection	2022 - 28															
E8	Upper Guadalupe Flood Protection	2022 - 26															
Priority F: Support Public Health and Public Safety for Our Community																	
F1	Vegetation Control and Sediment Removal for Capacity	2022 - 36															
F2	Emergency Response Planning and Preparedness	2022 - 36															
F3	Flood Risk Assessment Studies	2022 - 36															

Safe, Clean Water Program: Schedule

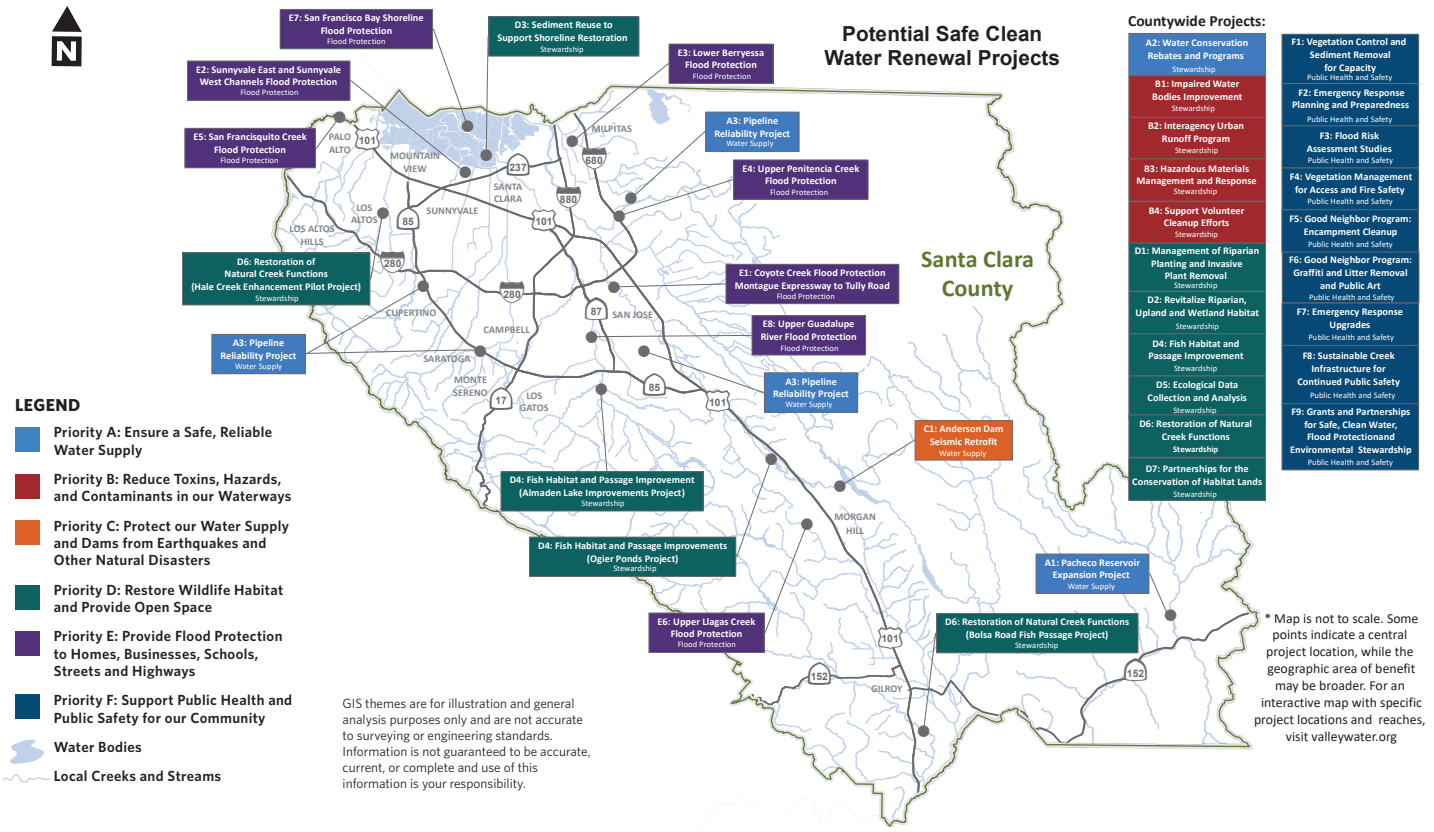
APPENDIX F

	Proposed Projects	Project Schedule	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
F4	Vegetation Management for Access and Fire Safety	2022 - 36															
F5	Good Neighbor Program: Encampment Cleanup	2022 - 36															
F6	Good Neighbor Program: Graffiti and Litter Removal and Public Art	2022 - 36															
F7	Emergency Response Upgrades	2022 - 36															
F8	Sustainable Creek Infrastructure for Continued Public Safety	2022 - 36															
F9	Grants and Partnerships for Safe, Clean Water, Flood Protection and Environmental Stewardship	2022 - 36															

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Safe, Clean Program: Countywide Map

APPENDIX G



Countywide Projects:

- A2: Water Conservation Rebates and Programs — Stewardship
- B1: Impaired Water Bodies Improvement — Stewardship
- B2: Interagency Urban Runoff Program — Stewardship
- B3: Hazardous Materials Management and Response — Stewardship
- B4: Support Volunteer Cleanup Efforts — Stewardship
- D1: Management of Riparian Planting and Invasive Plant Removal — Stewardship
- D2: Revitalize Riparian, Upland and Wetland Habitat — Stewardship
- D4: Fish Habitat and Passage Improvement — Stewardship
- D5: Ecological Data Collection and Analysis — Stewardship
- D6: Restoration of Natural Creek Functions — Stewardship
- D7: Partnerships for the Conservation of Habitat Lands — Stewardship
- F1: Vegetation Control and Sediment Removal for Capacity — Public Health and Safety
- F2: Emergency Response Planning and Preparedness — Public Health and Safety
- F3: Flood Risk Assessment Studies — Public Health and Safety
- F4: Vegetation Management for Access and Fire Safety — Public Health and Safety
- F5: Good Neighbor Program: Encampment Cleanup — Public Health and Safety
- F6: Good Neighbor Program: Graffiti and Litter Removal and Public Art — Public Health and Safety
- F7: Emergency Response Upgrades — Public Health and Safety
- F8: Sustainable Creek Infrastructure for Continued Public Safety — Public Health and Safety
- F9: Grants and Partnerships for Safe, Clean Water, Flood Protectionand Environmental Stewardship — Public Health and Safety

LEGEND

- Priority A: Ensure a Safe, Reliable Water Supply
- Priority B: Reduce Toxins, Hazards, and Contaminants in our Waterways
- Priority C: Protect our Water Supply and Dams from Earthquakes and Other Natural Disasters
- Priority D: Restore Wildlife Habitat and Provide Open Space
- Priority E: Provide Flood Protection to Homes, Businesses, Schools, Streets and Highways
- Priority F: Support Public Health and Public Safety for our Community
- Water Bodies
- Local Creeks and Streams

GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

* Map is not to scale. Some points indicate a central project location, while the geographic area of benefit may be broader. For an interactive map with specific project locations and reaches, visit valleywater.org

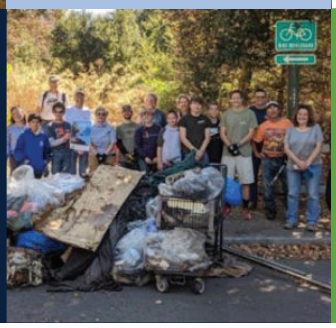
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Appendix C – Safe, Clean Water and Natural Flood Protection Program Projects 2012 and 2020

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Appendix B
Settlement Agreement

Appendix B – Settlement Agreement

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SETTLEMENT AGREEMENT REGARDING WATER RIGHTS OF THE SANTA CLARA VALLEY WATER DISTRICT ON COYOTE, GUADALUPE, AND STEVENS CREEKS

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This Settlement Agreement ("Settlement" or "Agreement") is entered into by and between the Santa Clara Valley Water District ("SCVWD"), the United States Department of the Interior, Fish and Wildlife Service ("FWS"), the United States Department of Commerce, National Marine Fisheries Service ("NMFS"), the California Department of Fish and Game ("DFG"), the Guadalupe-Coyote Resource Conservation District ("GCRCD"), Trout Unlimited, the Pacific Coast Federation of Fishermen's Associations, and California Trout, Inc., to resolve disputes regarding SCVWD's use of its water rights on Coyote, Guadalupe, and Stevens Creeks in Santa Clara County, California.

RECITALS

A. SCVWD is authorized to appropriate and acquire water and water rights for any purpose useful to SCVWD and to manage flood control operations within Santa Clara County. (Water Code Appendix Section 60-1 *et seq*.)

B. Beginning in 1928, SCVWD initiated the appropriation, storage, conservation and distribution of water within Santa Clara County, and continuously thereafter it has applied the conserved water to beneficial use. It obtained permits and then licenses from the State Water Resources Control Board ("SWRCB") and its predecessor agencies.

C. On or about July 11, 1996, GCRCD filed a complaint against SCVWD with the SWRCB ("Complaint"). It alleged that SCVWD's use of its water right Licenses on Coyote Creek, Guadalupe River, and Stevens Creek ("Three Creeks") degraded fish, wildlife, water quality, and other beneficial uses, in violation of the California Constitution, Water Code, Fish and Game Code, and the public trust doctrine.

D. On October 19, 1996, SCVWD answered the Complaint and denied GCRCD's allegations. It stated that its appropriation, storage, conservation and distribution of water complied with all applicable laws.

E. Effective October 17, 1997, Central California Coast steelhead (*Oncorhynchus mykiss*) was listed as threatened under the Federal Endangered Species Act (62 Fed.Reg. 43937, August 18, 1997). The Central California Coast steelhead Evolutionarily Significant Unit includes steelhead in coastal California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays.

F. In 2001, Section 60-4 of the SCVWD authorizing act was amended to modify the objectives and powers of SCVWD to include the power "to enhance, protect, and restore streams, riparian corridors, and natural resources in connection with carrying out the objects and purposes set forth in this section."

G. SCVWD and DFG convened settlement negotiations, referred to as the "Fish and Aquatic Habitat Collaborative Effort" ("FAHCE"). FAHCE undertook field investigations and other studies of the environmental conditions that limit the population and distribution of steelhead trout and salmon in the Three Creeks. The resulting scientific record provides a factual basis for this Agreement. Specifically, the field investigations and other environmental studies indicate that if SCVWD's diversion, storage and use of water under its licenses ("Licenses") and permit ("Permit") are conducted in accordance with the terms of this Agreement, SCVWD will be in compliance with all applicable laws that are within the respective jurisdiction of any Party to this Agreement or within the jurisdiction of the SWRCB.

H. This Agreement embodies a comprehensive settlement resulting from FAHCE's work.

NOW THEREFORE, in consideration of the mutual promises specified herein and by conditioning their performance under this Agreement upon satisfaction of the identified conditions precedent set forth in Article V, and for other good and valuable consideration, the Parties agree as follows:

ARTICLE I
PURPOSE OF AGREEMENT

1.1 Purpose of Agreement

1.1.1 Comprehensive Settlement. This Agreement is a settlement among the Parties to comprehensively address and resolve all issues in the Complaint and any related issues arising under state and federal laws that concern the impacts of SCVWD's facilities and operations on the beneficial uses of the Three Creeks, with the exception of mercury contamination issues that are the subject of a pending Natural Resource Damage Assessment ("NRDA") proceeding, and which are not included in or addressed by this Agreement.

ARTICLE II
RULES OF CONSTRUCTION
AND DEFINITIONS

2.1 Rules of Construction. This Agreement will be subject to the following rules of construction.

2.1.1 No Limitation on Statutory Authority. Other than as expressly set forth herein, the Agreement will not be construed to affect or limit the authority of any Party to fulfill its statutory, regulatory, or contractual responsibilities under applicable law.

2.1.2 Negotiated Resolution. The Agreement is made upon the express understanding that it constitutes a negotiated resolution of disputed issues and an Offer of Compromise in accordance with California Evidence Code Section 1152. No Party will be deemed to have consented to any resolution, except as expressly provided herein. The Agreement is not intended and will not be construed, cited or referenced by any Party in any administrative or legal proceeding between or involving any Party, other than: (i) as proof of the Settlement and that the issues addressed herein have been resolved; or (ii) for use in such proceeding to construe or enforce the provisions of the Agreement in the event of default.

2.1.3 Liberal Construction. The provisions of this Agreement will be liberally construed to effectuate its purposes.

2.1.4 Plain Meaning. The provisions of this Agreement will be construed simply according to their plain meaning and will not be construed for or against any Party, as each Party has participated in the drafting of this Agreement and has had the opportunity to have its counsel review it.

2.1.5 Plural and Gender. Whenever the context and construction so require, all words used in the singular will be deemed to be used in the plural, and all masculine will include the feminine and neuter, and vice versa.

2.1.6 Context. Unless the context otherwise requires, the word "including" means without limitation, the word "or" is not exclusive, and the words "herein," "hereto" and "hereunder" refer to this Agreement as a whole.

2.1.7 Exhibits, Appendices, Amendments and Legislation. All Exhibits attached to this Agreement are incorporated by this reference as though fully stated in this Agreement and are deemed to be part of the Agreement. The Appendices will be used in construing the Agreement, by providing background and illustration, but they are not part of the Agreement. Unless the context otherwise requires, (i) a reference to a provision of the Agreement or other document means such Agreement or other document as amended from time to time; and (ii) a reference to a statute means

such statute as amended from time to time and includes any successor statute thereto. Amendment to the Agreement is binding only as to the Parties that execute the Amendment.

2.1.8 Captions. The captions, headings and index of this Agreement are for convenience only and have no effect in the interpretation of this Agreement.

2.2 Definitions

2.2.1 "Adaptive Management Team" or "AMT" means the entity established by paragraph 7.2 of this Agreement.

2.2.2 "Acre-Foot" means a unit of measurement.

2.2.3 "Additional Measures" means measures that (A) SCVWD will implement in Phases Two or Three, (B) additional to those measures implemented in Phase I, (C) provided the criteria stated in paragraph 6.1.2 are met.

2.2.4 "ADR" means the use of a facilitator or any mutually agreeable form of non-binding mediation or dispute resolution.

2.2.5 "Agreement Year" means a specific year after the Agreement becomes effective, counting chronologically from the Effective Date of this Agreement.

2.2.6 "CEQA" means the California Environmental Quality Act (California Public Resources Code Section 21000 *et seq*.).

2.2.7 "Corps" means the United States Army Corps of Engineers.

2.2.8 "Effective Date" means the date upon which all conditions precedent stated in paragraphs 5.3 to 5.8 have been satisfied, and all Parties have executed the Agreement. SCVWD and other Parties' obligations to perform under Articles VI through IX will commence on the Effective Date.

2.2.9 "EIR" means an environmental impact report pursuant to CEQA.

2.2.10 "EIR/EIS" means both an environmental impact report and an environmental impact statement that may be prepared and issued jointly or independently by responsible state and federal agencies in accordance with applicable environmental laws.

2.2.11 "EIS" means an environmental impact statement pursuant to NEPA.

2.2.12 "Emergency" means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. "Emergency" includes such occurrences as fire, flood,

earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.

2.2.13 "Environmental Review" means review and analysis of potential impacts of the Agreement on the environment under state and federal laws.

2.2.14 "Environmental Setting" means the baseline conditions of the Three Creeks pursuant to CEQA Guidelines Section 15125 and any corresponding NEPA provision, as further described in paragraphs 5.3.2 and 5.4.2.

2.2.15 "ESA" means the Federal Endangered Species Act (16 U.S.C. Sections 1531 *et seq*.).

2.2.16 "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

2.2.17 "HCP" means "a habitat conservation plan" within the meaning of Section 10 of the ESA (16 U.S.C. Section 1539).

2.2.18 "Initialing" means the initialing of this Agreement by a legally authorized representative on behalf of a Party.

2.2.19 "Initialing Date" means the first date when all Parties have initialed this Agreement, or when a subset of Parties have initialed the Agreement as set forth in paragraph 4.1.2.

2.2.20 "NEPA" means the National Environmental Policy Act (42 U.S.C. Sections 4321 *et seq*.).

2.2.21 "Party" or "Parties" means a party to this Agreement.

2.2.22 "SWRCB" means the State Water Resources Control Board.

2.2.23 "Three Creeks" means Coyote Creek, Guadalupe River, and Stevens Creek and their watersheds, including tributaries.

ARTICLE III
TERM, SUSPENSION, WITHDRAWAL AND TERMINATION

3.1 Perpetual Agreement Consisting of Four Phases. This Agreement will consist of a total of four phases. These are: three phases of ten years each for implementation following the Effective Date, and a continuing perpetual phase thereafter. Each of the initial three phases includes distinct management objectives and measures to achieve the Overall Management Objectives stated in paragraph 6.2.2. The fourth and perpetual phase will serve to continue the benefits obtained under Phases One, Two, and Three.

3.1.1 The Agreement, and specifically, the obligations to perform under Articles VI through IX, will be effective as of the Effective Date.

3.1.2 The term of Phase One begins on the Effective Date and continues until the last day of Agreement Year Ten.

3.1.3 The term of Phase Two begins on the first day of Agreement Year Eleven and continues until the last day of Agreement Year Twenty.

3.1.4 The term of Phase Three begins on the first day of Agreement Year Twenty-One and continues until the last day of Agreement Year Thirty.

3.1.5 Phase Four begins on the first day of Agreement Year Thirty-One and continues for so long as SCVWD is diverting water under its Licenses and Permit.

3.2 Termination. The obligations of any Party under this Agreement may be terminated by and for that Party by its withdrawal from the Agreement. However, a Party may withdraw from this Agreement only if: (i) it has complied with the ADR procedures stated in paragraph 9.1.1 to resolve the dispute; or (ii) the withdrawal is required to fulfill its statutory or regulatory responsibility. The withdrawal of any Party other than the SCVWD will not terminate the Agreement among the remaining Parties. However, upon the withdrawal of any other Party, SCVWD will have a right to terminate the Agreement among the remaining Parties by providing notice to them and the SWRCB within 90 (ninety) days of such withdrawal or within a reasonable time following the initiation of legal proceedings against the SCVWD by any withdrawing Party.

3.3 Suspension. Any Party that is a government agency may suspend participation or, if necessary, withdraw from this Settlement, without first using the ADR procedures referenced in paragraph 3.2 and more fully set forth in paragraph 9.1.1 in the event of: (i) an Emergency; or (ii) if required to fulfill a statutory or regulatory responsibility. Upon the withdrawal from the Settlement by any Party, each remaining Party (whether or not a governmental agency) will have discretion whether, with the consent of the other Parties, it will suspend its own performance.

ARTICLE IV
PRE-EFFECTIVE DATE AND CONTINUING COVENANTS

4.1 Pre-Effective Date Covenants. The Parties make and will implement the following covenants, which apply before the Effective Date.

4.1.1 SCVWD will be solely responsible for its costs of processing Environmental Review of the Agreement, and these costs will not apply against the maximum expenditure limitations of paragraph 8.1.1. SCVWD will not have an obligation to reimburse or otherwise pay Parties for any of their assistance, participation, or cooperation in any activities pursuant to the Agreement before the Effective Date.

4.1.2 After the Initialing Date the Parties will jointly submit the Agreement to the SWRCB. They will represent that, to the best of their current knowledge, SCVWD's use of its Licenses and Permit, if amended in substantial conformity with this Agreement, will comply with all applicable laws, including but not limited to the public trust doctrine and Article X, Section 2 of the California Constitution. Accordingly, they will ask the SWRCB to amend such Licenses and Permit in substantial conformity with the Agreement and to issue findings in substantial conformity with those set forth in Exhibit B attached hereto. If the SCVWD, FWS, NMFS, DFG, and GCRCD have initialed the Agreement within 90 (ninety) days after Initialing by any Party, those Parties will submit the Agreement to the SWRCB under this paragraph regardless of the failure of any of the other Parties to initial the Agreement.

4.1.3 In proceedings before the SWRCB to amend the Licenses and Permit in accordance with this Agreement, the Parties will support the adoption of license and permit amendments in substantial conformity with this Agreement and the issuance of each of the findings set forth in Exhibit B, if the record continues to demonstrate that these measures are the best alternative to protect and maintain the beneficial uses of these waters and otherwise comply with applicable laws. The Parties may modify the Agreement if the record demonstrates that another alternative will better protect and maintain such beneficial uses. However, SCVWD may not be compelled to implement the Agreement unless the amendments to its Licenses and Permit and corresponding findings are issued by the SWRCB in substantial conformity with the Agreement.

4.1.4 On submittal described in paragraph 4.1.2, GCRCD will indicate its support for the SWRCB's dismissal of its Complaint against SCVWD upon the SWRCB's adoption of the requested license and permit amendments and the issuance of the related findings in substantial conformity with the Agreement. Upon the SWRCB's approval of the license and permit amendments and the issuance of the related findings in substantial conformity with the Agreement, GCRCD will withdraw its Complaint with prejudice.

4.1.5 Unless a Party, within 30 (thirty) days of the SWRCB's final order issuing license and permit amendments and related findings, objects in writing to all other Parties that such amendments

or findings do not substantially conform with the Agreement, no Party will seek administrative or judicial review of the SWRCB's order.

4.1.6 If a Party objects in writing to all other Parties that the license or permit amendments or the related findings do not substantially conform with the Agreement, the Parties will attempt to resolve the dispute, pursuant to the ADR procedures of paragraph 9.1.1, prior to the deadline for administrative or judicial review. An objecting Party may seek such review of the amendments if the dispute is not resolved by that deadline. If judicial review is taken, the Parties will use the ADR procedures of paragraph 9.1.1 in an effort to resolve the dispute. No Party may be compelled to proceed to implement its obligations under Articles VI through IX of this Agreement unless it determines, in its sole discretion, that the SWRCB approval and findings are in substantial conformity with the Agreement.

4.1.7 The Parties will execute the Agreement upon satisfaction of all conditions precedent stated in paragraphs 5.3 to 5.8.

4.2 Continuing Covenants Before and After Effective Date. The Parties make the following continuing covenants, which will take effect on initialing and continue in effect for the term of the Agreement.

4.2.1 The Parties will perform their obligations arising under this Agreement in good faith.

4.2.2 The Parties will reasonably cooperate in the sharing of data, information and documents to the extent necessary to satisfy the filing and recording requirements of State and Federal regulatory agencies, including those of the SWRCB.

4.2.3 Subject to its right to terminate this Agreement pursuant to paragraph 3.2, SCVWD will operate its diversion, storage and distribution of water and use its water rights in accordance with the requirement that the water be used reasonably and beneficially and in accordance with the terms and conditions of the Permit and Licenses as they may be amended by the SWRCB under its reserved jurisdiction, from time to time.

4.2.4 Each Party independently represents that, subject to the development or discovery of significant new information (including change in applicable law) relevant to this Agreement, each of their respective responsibilities regarding the subject matter of this Agreement has been, is, or will be satisfied through accomplishment of the measures set out in this Agreement.

4.2.5 Prior to securing any binding commitment and thereafter, each Party will give due regard to its responsibilities under applicable law.

4.2.6 SCVWD is solely responsible for the operation of the facilities subject to the Agreement. By this Agreement, no Party other than SCVWD accepts or obtains any responsibility for such operation.

4.2.7 SCVWD will pay for the cost of its actions required by the Agreement or the license and permit amendments. SCVWD will not have an obligation to reimburse or otherwise pay Parties for any of their assistance, participation, or cooperation in any activities pursuant to the Agreement or the license and permit amendments.

4.2.8 Implementation of this Agreement by FWS or NMFS is subject to the Anti-Deficiency Act (31 U.S.C. Section 1341) and the availability of appropriated funds. Similarly, implementation of the Agreement by DFG is subject to the availability of appropriated funds. The Agreement is not intended and will not be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury or the State of California Treasury.

4.2.9 Request for Amendment of the Licenses and Permit

4.2.9.1 Request for Amendment by Party Other than SCVWD. After the Effective Date, and except as required to fulfill statutory or regulatory responsibilities, a Party other than SCVWD may not seek to further amend or otherwise reopen the Licenses and Permit, unless significant new information, not available as of the Effective Date, including change in applicable law, demonstrates that the Licenses and Permit, as amended in conformity with this Agreement, do not comply with applicable law. In such an event, the Party will provide SCVWD with at least 90 (ninety) days notice to consider the new information and the Party's application of that information to the Settlement. In the event of an Emergency, a Party may seek to amend or reopen the Licenses and Permit after providing 72 (seventy-two) hours notice to SCVWD and other Parties. The notice will include a brief summary of the condition creating the Emergency and the relief that the Party intends to request from the SWRCB. Upon a Party's request to reopen SCVWD's water rights Licenses or Permit, SCVWD will have the sole discretion to either suspend performance or, with the consent of the then remaining Parties, to withdraw from the Settlement pursuant to paragraph 3.2.

4.2.9.2 Request for Amendment by SCVWD. SCVWD will not seek to amend its Permit and Licenses in a manner that is inconsistent with this Agreement. SCVWD will provide written notice to the other Parties in advance of filing any petition to the SWRCB to change the place, purpose, method, or quantity of use stated in the Permit or Licenses listed in Exhibit A. In the event that a Party contends that a proposed change is inconsistent with the Agreement, they may resolve the dispute in accordance with the dispute resolution procedures set forth in Article IX.

ARTICLE V
EXPRESS CONDITIONS PRECEDENT TO IMPLEMENTATION OF ARTICLES VI-IX

5.1 Initialing and Release of Agreement. SCVWD and each other Party will initial the Agreement. Following the Initialing Date, the Agreement will be submitted to the SWRCB as an offer of settlement of the Complaint and will be made available for public review and comment.

5.1.1 The initialing of the Agreement will not create any binding commitment by any Party to effect any change in the environment, to carry out any project within the meaning of CEQA or NEPA, or to implement the measures set forth in Articles VI through IX, other than to make the Agreement available for public review and comment and for the purpose of defining a project for Environmental Review.

5.1.2 No Party will allege or seek judicial or administrative redress based upon detrimental reliance or estoppel as a result of actions taken by any other Party after the other Party's initialing of this Agreement and before the Effective Date.

5.2 Time Limit for Satisfaction of Conditions Precedent. SCVWD and other Parties' obligations to implement Articles VI through IX, inclusive, will commence on the Effective Date, upon satisfaction of each of the express conditions precedents set forth in paragraphs 5.3 through 5.8 and within 24 (twenty-four) months of the Initialing Date.

5.3 CEQA Compliance. A condition precedent to the Effective Date is that the SCVWD will have completed Environmental Review for the project in accordance with the provisions of CEQA and all applicable laws within its jurisdiction.

5.3.1 This Agreement will form the basis of the project for the purposes of CEQA. It consists of the complete settlement of the Complaint. The project consists of all commitments in the Agreement, including commitments to continue activities undertaken by SCVWD in response to the Complaint and prior to the start of the environmental analysis.

5.3.2 The baseline for purposes of CEQA will not include any activities undertaken by SCVWD after July 11, 1996, the date on which the Complaint was filed, in response to the Complaint or otherwise as part of the FAHCE process, inasmuch as these activities are experimental management, minor physical alterations, or within the range of ongoing operations.

5.3.3 As provided in the regulatory approvals for flood control projects and other programs, and subject to paragraph 5.3.2, SCVWD will monitor existing conditions of the Three Creeks and will use the monitoring results as part of the Environmental Setting in the CEQA and other regulatory reviews of this Agreement.

5.3.4 Environmental Review will be deemed complete when SCVWD has certified its Environmental Review document in compliance with CEQA.

5.3.5 The Parties will exercise reasonable best efforts to coordinate the CEQA and NEPA related reviews. To the extent practicable, an integrated environmental document will be used.

5.4 NEPA Compliance. A condition precedent to the Effective Date is that the lead federal agency (whether the FWS, NMFS, or another agency) for the actions contemplated in this Agreement will have completed Environmental Review for the project in accordance with NEPA and all related applicable laws.

5.4.1 This Agreement will form the basis of the description of the preferred alternative(s) for the purposes of NEPA. It consists of the complete settlement of the Complaint. The project consists of all commitments in the Agreement, including commitments to continue activities undertaken by SCVWD in response to the Complaint and prior to the start of the environmental analysis.

5.4.2 The baseline for purposes of NEPA will not include any activities undertaken by SCVWD after July 11, 1996, the date on which the Complaint was filed, in response to the Complaint or otherwise as part of the FAHCE process, inasmuch as these activities are experimental management, minor physical alterations, or within the range of ongoing operations.

5.4.3 Environmental Review under NEPA will be deemed complete when the FWS, the NMFS, and the Corps have certified that their respective reviews comply with NEPA.

5.4.4 The Parties recognize that it is likely that the Corps, the FWS, or other federal agency will be the lead agency for purposes of preparing the NEPA document. FWS and NMFS will coordinate environmental review with the Corps. Without regard to which federal agency acts as lead agency, the NEPA document will include a comprehensive conservation strategy.

5.5 SWRCB. A condition precedent to the Effective Date is that, following any administrative or judicial appeal, the SWRCB will have:

5.5.1 Ordered amendments to the Licenses and Permit in substantial conformity with the Agreement; and

5.5.2 Adopted findings in substantial conformity with those set forth in Exhibit B that conclude that SCVWD's storage, diversion and use of water in implementing this Agreement comply with all applicable laws that are within the jurisdiction of the SWRCB. This finding will cover repair and replacement of the existing SCVWD facilities pursuant to which SCVWD presently diverts, stores and distributes water under the Permit and Licenses set forth in Exhibit A. New facilities, including any proposed diversions, storage or distribution of water unrelated to this Agreement, will require independent review and analysis.

5.6 GCRCD. A condition precedent to the Effective Date is that the GCRCD will have indicated its support for the SWRCB's dismissal of GCRCD's Complaint with prejudice. GCRCD will unconditionally support dismissal of its Complaint by the SWRCB if it determines that findings or amendments to the Permit and Licenses in the SWRCB's final order are in substantial conformity with the Agreement. If it determines that such findings or amendments are not in substantial conformity, GCRCD may, consistent with paragraph 4.1.6, elect not to support dismissal of its Complaint or may undertake an administrative or judicial appeal of the SWRCB's order.

5.7 DFG. A condition precedent to the Effective Date is that DFG, in its discretion and in accordance with all applicable laws, will have issued any approvals required to adopt or implement the Agreement, including any permit or approvals that may be necessary under the California Endangered Species Act. Such issuance will be done only after DFG has been provided with a full and fair opportunity to evaluate the scientific record, including but not limited to the EIR/EIS and any other relevant facts and circumstances.

5.8 FWS and NMFS. A condition precedent to the Effective Date is that FWS and NMFS, each in its complete and sole discretion and in accordance with all applicable laws, and only after having been provided a full and fair opportunity to evaluate the scientific record, including but not limited to the EIR/EIS and any other relevant facts and circumstances, will have:

5.8.1 Determined, after completing consultation in full compliance with all requirements of Section 7 of the ESA with any and all responsible federal action agencies, including but not limited to the Corps, that issuance of any permits under the Clean Water Act or any other federal action subject to such consultation that is required to implement the measures contained in this Agreement will neither jeopardize the continued existence of any listed species nor result in the adverse modification of any designated critical habitat, as those terms are used within the meaning of the ESA and provided in Exhibit C;

5.8.2 Found that the Agreement or the implementation of its measures will either not require the issuance of an incidental take permit or issued all such permits under Section 10 of the ESA as may be necessary to implement the Agreement as provided in Exhibit C;

5.8.3 If a permit is required under Section 10 of the ESA, approved an HCP for the Three Creeks subject to this Settlement, inclusive of a no-surprises provision, for a period not less than 50 (fifty) years from the Effective Date as provided in Exhibit C.

5.8.3.1 The HCP will be a multi-species program, which will include all federally-listed species, and all candidate species, proposed species, and species of special concern at the time the HCP is submitted.

5.8.3.2 Upon issuance of an incidental take permit, SCVWD will be provided all no surprises assurances, as set forth in the implementing regulations for the ESA at 50 CFR 17.22(b)(5) and 50 CFR 222.307(g).

5.8.4 Promised to subsequently work in good faith to incorporate the conservation strategy within the HCP for the Three Creeks subject to this Agreement into a countywide HCP for Santa Clara County for a period of not less than 50 (fifty) years from the Effective Date, if and when such a countywide HCP is adopted.

ARTICLE VI
PROGRAM FOR RESTORATION OF THREE CREEKS

6.1 In General. The Agreement will be implemented in Four Phases.

6.1.1 All measures described as occurring in Phase One that do not require additional study, Environmental Review, or modification of capital facilities, including the flow measures, will begin immediately after the Effective Date. All other measures will be implemented expeditiously, not later than the last day within the ten-year term of Phase One.

6.1.2 Implementation of Additional Measures in Phases Two and Three will occur only if: (i) the Parties agree that the Overall Management Objectives defined in the preceding phase(s) have not yet been satisfied at the end of the 10-year term of the immediately preceding phase; (ii) the proposed measures are deemed feasible under CEQA and NEPA; and (iii) the proposed measures are anticipated to contribute to meeting the Overall Management Objectives in a cost-effective manner as provided in paragraph 7.3. Unless each of these three criteria is satisfied, SCVWD will be discharged of further responsibility for carrying out or funding Additional Measures described in each such Phase. Appendix D describes the proposed schedule for implementing measures in Phases One through Three.

6.1.3 In Phase Four, SCVWD will continue the flow and other measures set forth in paragraph 6.7.

6.2 Elements Common to the Three Creeks

6.2.1 Beneficial Uses. This Agreement commits SCVWD and other Parties to a program of measures intended to restore and maintain fisheries, wildlife, water quality and other beneficial uses of the Three Creeks in good condition. The overall management objectives stated in paragraph 6.2.2 focus on steelhead trout (*Oncorhynchos mykiss*) and chinook salmon (*Oncorhynchus tshawytscha*). Since the Agreement is intended to restore both fisheries to good condition in the Three Creeks, the Agreement will not be interpreted or administered in a manner that favors one fishery to the detriment of the other. Accordingly, in construing and implementing this Agreement, the Parties will give equal consideration to both fisheries. In adaptive management of a given measure as provided in paragraph 7.1, the Parties (through the Adaptive Management Team) may implement such measure in a manner which is more beneficial for one fishery than another, after due consideration of the criteria stated in paragraph 7.3.

6.2.2 Overall Management Objectives. Implementation of the Agreement will restore and maintain healthy steelhead trout and salmon populations as appropriate to *each* of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.2.3 Storage, Diversion, and Rediversion of Water. SCVWD will store, divert, and redivert water in a manner that is consistent with the Overall Management Objectives set forth in paragraph 6.2.2.

6.2.4 Phase One Measures

6.2.4.1 Flow Measures. Unless modified under paragraph 6.3, SCVWD will make reservoir flood releases, fisheries passage releases, and other planned (non-Emergency) operations changes using the criteria described in Appendix E.

6.2.4.2 Continuing Efforts to Improve Fish Passage. With the support of the other Parties, SCVWD will make reasonable best efforts to assure that passage barriers other than those listed in paragraphs 6.4 through 6.6, inclusive, are remediated. At a minimum, pursuant to the adaptive management program of Article VII, the Parties will periodically evaluate and determine whether such barriers interfere with the timely achievement of the management objectives for each creek.

6.2.4.3 Fish Habitat Restoration Plan. In coordination with DFG, SCVWD will develop and implement a Fish Habitat Restoration Plan that will specify techniques, locations, and implementation schedules to enhance spawning and rearing habitats for steelhead trout and salmon in the Three Creeks. As early as feasible in the development of the plan, SCVWD will work cooperatively with DFG and NMFS to obtain their input on the content of the plan.

6.2.4.3.1 Spawning Habitat. The plan will include a program of placement of gravel to enhance existing spawning habitat. It will also include:

(A) Identification of existing habitat that is suitable for spawning, but inadequate for gravel;

(B) Procedures to develop an annual work plan for the Adaptive Management Team's review; and

(C) Commitment to implement the program, subject to periodic review and modification by the Adaptive Management Team.

6.2.4.3.2 Rearing Habitat. The plan will include a program to enhance rearing habitat. This program will include:

(A) Appropriate placement of large organic debris, channel modifications including berms, and riparian canopy enhancement;

(B) Procedures to develop an annual work plan for the Adaptive Management Team's review; and

(C) Commitment to implement the program, subject to periodic review and modification by the Adaptive Management Team.

6.2.4.3.3 Fish Passage. The plan will include a program to enhance passage to suitable spawning and rearing habitat. It will incorporate the priorities listed below, unless the Adaptive Management Team established pursuant to paragraph 7.2 determines other priorities.

6.2.4.4 Geomorphic Functions. SCVWD will undertake the following measures to enhance and restore the geomorphic functions of the three watersheds subject to the Settlement.

6.2.4.4.1 SCVWD will prepare a Geomorphic Functions Study. The study will:

(A) Identify stream reaches where geomorphic functions necessary for channel maintenance or formation (e.g., hydraulic runoff, bedload transport, channel migration, riparian vegetation succession) are impaired; and

(B) For each such reach, evaluate the feasibility of restoring such geomorphic functions. SCVWD will consider: modifying the channel dimensions for the purpose of carrying bank-full flow; varying the meander shape; planting riparian vegetation; removing culverts, riprap, and other structures; and stabilizing the area with the use of bioengineering techniques. The study will include an alternative that assumes current right-of-way constraints, and another alternative that investigates right-of-way increases where needed.

6.2.4.4.2 If found to be feasible, SCVWD will develop and implement pilot projects to restore geomorphic functions. These pilot projects will be a minimum of 2,000 linear feet of channel in each of the Three Creeks, chosen for maximum benefit to the steelhead trout and salmon fisheries.

6.2.4.4.3 SCVWD will adopt general guidelines for bank stabilization projects undertaken by other persons. These guidelines will be designed to maintain or enhance geomorphic functions, riparian conditions and fish habitat. They will include techniques and strategies based on the ability of riparian vegetation to hold soil, protect banks, and otherwise stabilize the stream channel. They will address use of structures such as jacks, lunkers, dirt-filled gabions, rock work, and crib walls, if necessary to rebuild a stream bank and offer stability until riparian vegetation is established.

6.2.4.5 Advanced Recycled and Other Urban Water Plan. In cooperation with the City of San Jose, SCVWD will complete an Advanced Recycled and other Urban Water Plan. The plan will evaluate the feasibility and suitability of using the water, supplied by the City of San Jose after Advanced Recycled Water Treatment ("ARWT"), to enhance the continuity of instream flow suitable for achieving the Overall Management Objectives in the Three Creeks, from the highest point of fish passage downstream to the San Francisco Bay. It will also evaluate the feasibility of using other urban water, such as discharges from storm sewers, sump pumps, and similar sources, for this same purpose. The evaluation of feasibility will include, for each watershed, a reasonable range of alternatives for: (i) direct use of ARWT water and other urban water for such instream flow; and (ii) conjunctive use of natural flow, imported water, groundwater, and ARWT or other urban water. The evaluation of suitability will include impacts on fish habitat (including water temperature, toxicity, and endocrine disruption) and other beneficial uses. If a feasible and suitable alternative exists, the plan will recommend action, including designs and schedules for construction of any necessary facilities.

6.2.4.5.1 SCVWD will assist the City of San Jose in the implementation of the plan, including an appropriate contribution of capital and operation and maintenance costs directly associated with use of recycled or other urban water found to be feasible and appropriate.

6.2.4.5.2 Every ten years after the plan has been completed, SCVWD will review any new information or laws that may alter any plan recommendations against use of ARWT or other sources of urban water for augmenting instream flows.

6.2.4.5.3 In recommending or deciding upon the use of recycled water or other urban water as a measure to implement the Overall Management Objectives, the Parties will be guided by the criteria stated in paragraph 7.3.

6.3 Permissible Modifications to Implementation Common to All Watersheds.

6.3.1 Flow schedules or other operational changes described below may be temporarily modified by SCVWD in the event of an Emergency.

6.3.1.1 Within five (5) calendar days of the Emergency, SCVWD will provide written notice of the Emergency to the other Parties.

6.3.1.2 Within 30 (thirty) calendar days of the notice of the Emergency, SCVWD will provide a brief written summary of the actions taken to address the Emergency.

6.3.1.3 Upon written notice of a request for a meeting by a Party other than SCVWD, the Parties will meet to discuss the actions taken and alternative measures and conditions that may be used in the event of similar future emergencies.

6.3.2 Flow schedules or other operational changes described below may be temporarily modified by SCVWD to conduct routine facilities maintenance or repairs on all reservoirs,

diversions, stream flow stations, pipelines or other appurtenant facilities and structures owned by SCVWD in the Three Creeks.

6.3.2.1 Within 60 (sixty) calendar days in advance of the scheduled maintenance activity, SCVWD will provide written notice to the Parties describing the location and nature of the activity.

6.3.2.2 Within 30 (thirty) calendar days of the scheduled maintenance activity, a Party other than SCVWD may provide notice of an objection to the scheduled date, time, location or nature of the activity, and propose conditions or alternative measures that may be employed by SCVWD to remove the objection.

6.3.2.3 SCVWD may proceed with the routine maintenance if (i) if no Party objects; or (ii) SCVWD agrees to adopt the recommendations offered by the objecting Party.

6.3.2.4 If neither condition stated in paragraph 6.3.2.3 is satisfied, the matter will be referred to the AMT for a further recommendation. If the recommendation is unacceptable to any Party, it may exercise its rights to request formal dispute resolution in accordance with paragraph 9.1.

6.4 Coyote Creek Watershed

6.4.1 Management Objectives

6.4.1.1 Overall Management Objective. Implementation of the Agreement will restore and maintain a healthy steelhead trout and salmon population in the Coyote Creek watershed, by providing: (A) Approximately five miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek; and (B) Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.4.1.2 Phase Two Management Objectives. Subject to paragraph 6.1.2, the distribution of suitable habitat for salmon and steelhead trout will be materially extended up to an additional five miles (plus or minus) below Anderson Dam; or up to ten miles above Anderson Reservoir or Coyote Reservoir, as determined feasible.

6.4.1.3 Phase Three Management Objective. Subject to paragraph 6.1.2, the available habitat will be extended into suitable tributaries or above Anderson Reservoir or Coyote Reservoir.

6.4.2 Restoration Measures

6.4.2.1 Phase One Measures. In support of the Phase One Management Objectives described above, in each Agreement Year SCVWD will undertake the following measures:

6.4.2.1.1 Flow Releases. Unless modified under paragraph 6.3, SCVWD will make flow releases from Anderson Reservoir to Coyote Creek below the intake of the Coyote Canal as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases for the purpose of providing winter base flows in accordance with the reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. If the combined storage of Anderson and Coyote Reservoirs exceeds 80,000 acre-feet during this period, SCVWD will release a pulse flow from Anderson Reservoir through the outlet or the Anderson Hydroelectric Facility in order to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

(C) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 18 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Anderson Dam to approximately Golf Course Drive) as available cold water supply will allow. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E SCVWD may, but is not obligated to, substitute cold water from the Santa Clara conduit.

(D) February 1 to April 30. Within thirteen (13) months of the Effective Date, SCVWD will have a completed plan for addressing the potential entrainment of smolts in the coyote Percolation Facility. Upon completion of the plan, SCVWD will modify operation of Coyote Percolation Facility to minimize the creation and maintenance of ponds of water so to reduce the entrainment and predation of out-migrating steelhead trout smolts in accordance with the plan.

6.4.2.1.2 Priority Barriers

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in

the following table. SCVWD will be responsible for the costs of such remediation.

Watershed	Barrier Code	Barrier Name
Upper Penitencia	TBD	Penitencia Recharge Pond Diversion
Upper Penitencia	TBD	Overfelt Recharge Pond Diversion

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these barriers and will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Coyote Creek	FB34	Ogier Road Quarry Pond Complex	Santa Clara County
Coyote Creek	FB24	Singleton Road Low-Flow Crossing	City of San Jose
Upper Penitencia Creek	TBD	Unscreened Water Diversion	Santa Clara County

6.4.2.1.3 Coyote Creek Facilities Plan. SCVWD will complete a Coyote Creek Facilities Plan. The plan will include two parts, stated in paragraphs (a) and (b) below. SCVWD will implement the plan after obtaining any necessary regulatory approvals.

(A) Laguna Seca Groundwater Remediation. The plan will evaluate alternatives to manage groundwater inflow from Coyote Creek, for the purpose of allowing flow releases from Anderson Dam to continue uninterrupted to the vicinity of Metcalf Ponds in a manner that protects other parties' properties and water rights. If a feasible alternative exists, SCVWD will recommend action, including design and construction schedules.

(B) Metcalf Ponds Stream Corridor Restoration. The plan will evaluate alternatives to isolate percolation ponds, quarry pits, and other structures from the active channel in the vicinity of

Metcalf Road, in order to reestablish a free-flowing condition through that vicinity. If a feasible alternative exists, the plan will recommend action, including design and construction schedules.

6.4.2.1.4 Cherry Flat Reservoir. SCVWD will undertake reasonable best efforts to develop and execute a cooperative agreement with the City of San Jose regarding the operation of Cherry Flat Reservoir on Upper Penitencia Creek, to help ensure that habitat upstream of SCVWD's facilities is kept in good condition subject to the availability of water for release from the reservoir. In coordination with the cooperative agreement and operational plan for Cherry Flat Reservoir, SCVWD will also develop and execute an operational plan for SCVWD's facilities on Upper Penitencia Creek designed to maintain and enhance stream flow conditions for steelhead trout downstream of the Noble Avenue water diversion. The operational plans for Cherry Flat Reservoir and SCVWD facilities will seek to provide suitable flow conditions for adult passage, spawning, egg incubation, juvenile rearing and downstream migration of steelhead trout in Upper Penitencia Creek.

6.4.2.1.5 Trap and Truck. SCVWD will undertake a feasibility study of trap- and-truck operations at Anderson Reservoir, for the purpose of upstream and downstream migration of steelhead trout. The study will evaluate the suitability of spawning and rearing habitat for steelhead trout above Anderson and Coyote Reservoirs; the practicality of moving steelhead trout above the reservoirs and achieving successful out-migration; and the potential effects of such movement on existing steelhead trout populations in Coyote Creek.

6.4.2.2 Phase Two Additional Measures. Subject to paragraph 6.1.2, Additional Measures will be implemented as needed to achieve the Overall Management Objectives. These Additional Measures will be defined by the Phase One feasibility studies. The menu of potential Additional Measures includes:

(A) Revise water releases from Anderson Reservoir to provide for continuous stream flows in Coyote Creek from the reservoir to approximately Metcalf Road.

(B) Relocate the Coyote Percolation Facility off-stream.

(C) Remove or remediate Priority No. 2 barriers owned by SCVWD.

(D) Use recycled or other urban water to augment instream flows in Coyote Creek.

(E) Implement a Trap and Truck operation to relocate adult steelhead trout into upper watershed habitat above Anderson or Coyote Reservoirs and to assist in smolt out-migration.

6.4.2.3 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve the Overall Management Objectives.

6.5 Stevens Creek Watershed

6.5.1 Management Objectives

6.5.1.1 Overall Management Objectives. Implementation of the Agreement will restore and maintain a healthy steelhead trout population in the Stevens Creek watershed, by providing:

(A) Suitable spawning and rearing habitat below Stevens Creek Dam within a cold water management zone determined on an annual basis through the development of an operations plan; and

(B) Adequate passage for adult steelhead trout to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.5.1.2 Phase Two Management Objectives. Subject to paragraph 6.1.2, the distribution of suitable fishery habitat for steelhead trout will be materially extended up to an additional five miles (plus or minus) above Stevens Creek Reservoir or an additional two miles below Stevens Creek Reservoir, as determined feasible.

6.5.1.3 Phase Three Management Objectives. Subject to paragraph 6.1.2, the suitable habitat will be extended into suitable tributaries or above Stevens Creek Reservoir.

6.5.2 Phase One Restoration Measures. In support of the Phase One Management Objectives described above, in each Agreement Year, SCVWD will undertake the following measures.

6.5.2.1 Flow Releases. Unless modified under paragraph 6.3, SCVWD will make flow releases from Stevens Creek Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout spawning and egg incubation. SCWVD will make reservoir releases for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. Pulse flow releases will be made from Stevens Creek Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout smolt. SCVWD will make pulse flow

releases in accordance with the reservoir operations rule curves contained in Appendix E.

(C) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 19 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Stevens Creek Dam to approximately Highway 280) as available cold water supply will allow. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.5.2.2 Priority Barriers

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in the following table. SCVWD will be responsible for the costs of such barrier remediation.

Watershed	Barrier Code	Barrier Name
Stevens Creek	HL1	Moffet Fish Ladder
Stevens Creek	HL2	Evelyn Fish Ladder
Stevens Creek	HL3	Fremont Fish Ladder
Stevens Creek	HB10	Stream Gage 35

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers and will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Stevens Creek	HB25	Blackberry Farms Road Crossing	City of Cupertino
Stevens Creek	HB27	Blackberry Farms Irrigation Diversion	City of Cupertino

6.5.2.3 Portable Multi-Port Outlet. SCVWD will construct, install, and operate a portable, gravity-fed outlet at Stevens Creek Reservoir subject to the flow schedule described above. The outlet will be operated to manage the release of reservoir waters to maintain or enhance water temperature for steelhead trout rearing.

6.5.2.4 Hypolimneal Aeration. SCVWD will construct, install and operate a device on the downstream end of the reservoir outlet that will increase aeration of the reservoir outlet waters either through mechanical or passive methods.

6.5.2.5 Trap and Truck. SCVWD will undertake a feasibility study of trap-and-truck operations at Stevens Creek Reservoir regarding upstream and downstream migration of steelhead trout. The study will evaluate the suitability of spawning and rearing habitat for steelhead trout above the reservoir; the practicality of moving steelhead trout above the reservoir and achieving successful out-migration; and the potential effects of such movement on existing steelhead trout populations in Stevens Creek.

6.5.3 Phase Two Additional Measures. Subject to paragraph 6.1.2, Additional Measures will be implemented as needed to achieve the Overall Management Objectives. The proposed Additional Measures will be defined by the Phase 1 feasibility studies. The menu of Additional Measures includes:

(A) Remove or address Priority No. 2 barriers owned by SCVWD;

(B) Use recycled or other urban water to augment instream flows in Stevens Creek; and

(C) Implement a trap-and-truck operation to relocate adult steelhead trout into upper watershed habitat above Stevens Creek Reservoir.

6.5.4 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve the Overall Management Objectives.

6.6 Guadalupe River Watershed

6.6.1 Management Objectives

6.6.1.1 Overall Management Objectives. Implementation of the Agreement will restore and maintain healthy steelhead trout and salmon populations in the Guadalupe River watershed, by providing:

(A) Suitable spawning and rearing habitat for steelhead trout and salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River;

(B) Suitable spawning and rearing habitat for salmon below Calero and Almaden Dams to their confluence with Lake Almaden;

(C) Suitable spawning and rearing habitat for salmon in Los Gatos Creek from Camden Avenue to its confluence with Guadalupe River; and

(D) Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles.

6.6.1.2 Phase Two Management Objective. Subject to paragraph 6.1.2, the distribution of suitable fishery habitat for steelhead trout will be materially extended in Alamitos Creek up to an additional three miles (plus or minus) above Almaden Reservoir, or below either Calero Reservoir or Almaden Reservoir to its confluence with Lake Almaden, as determined feasible.

6.6.1.3 Phase Three Management Objective. Subject to paragraph 6.1.2, the suitable habitat below Calero and Almaden Reservoirs or above Almaden Reservoir will be extended.

6.6.2 Restoration Measures

6.6.2.1 Phase One Restoration Measures. In support of the Phase One Management Objectives described above, SCVWD will undertake the following measures.

6.6.2.1.1 Guadalupe River Main Stem

(A) Priority Barriers Owned by SCVWD. SCVWD will remediate the barriers to fish passage that it owns, as listed in the following table. SCVWD will be responsible for the costs of such remediation.

Watershed	Barrier Code	Barrier Name
Guadalupe River	AB20	Alamitos Drop Structure
Guadalupe River	AB7	St. John Street Gage Weir

(B) Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers; however, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River	AB13	Hillsdale Avenue Bridge	City of San Jose
Guadalupe River	AB14	SJWC Low-Flow Crossing	San Jose Water Company

6.6.2.1.2 Guadalupe Creek

6.6.2.1.2.1 Flow Releases. Unless modified under paragraph 6.3, in each Agreement Year SCVWD will make flow releases from Guadalupe Reservoir as provided below.

(A) May 1 to October 31. SCVWD will maintain a water temperature not to exceed 18 degrees Centigrade throughout as much of the cold water management zone (i.e., the reach from the outlets of Guadalupe Dam to approximately Camden Avenue) as available cold water supply will allow. SCVWD will make these releases for the purpose of supporting steelhead trout juvenile rearing. SCVWD will make these releases in accordance with the reservoir operations rule curves contained in Appendix E.

(B) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Guadalupe Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(C) February 1 to April 30. Pulse flow releases will be made from Guadalupe Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.2.2 Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers. However, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River (Pheasant Creek)	AAB1	Pheasant Creek Culvert	Unknown
Guadalupe River (Guadalupe Creek)	DB7	Old Dam	Private

6.6.2.1.3 Alamitos Creek

6.6.2.1.3.1 Flow Releases. Unless modified under paragraph 6.3, in each Agreement Year SCVWD will make flow releases from Almaden Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Almaden Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. Pulse flow releases will be made from Almaden Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.3.2 Priority Barriers Owned by Others. SCVWD will make reasonable best efforts to remove or remediate the passage barriers owned by other persons, as listed in the following table. SCVWD will fund not more than 50 percent of the costs to remediate these passage barriers. However, SCVWD will undertake reasonable best efforts with the Parties and owners to secure the additional funds necessary to perform the remediation.

Watershed	Barrier Code	Barrier Name	Owner
Guadalupe River (Alamitos Creek)	CB5	Drop Structure	Private

6.6.2.1.3.3 Alamitos Creek Facilities Plan. SCVWD will complete an Alamitos Creek Facilities Plan. The plan will include two parts, stated below. SCVWD will implement the plan, after obtaining any necessary regulatory approvals.

(A) Almaden Dam. The plan will evaluate alternatives to provide unimpeded passage, both upstream and downstream, at the existing dam and reservoir; eliminate the warming of water temperature in the reservoir; and eliminate or minimize the methylation of mercury in the sediments behind the dam. If a feasible alternative exists, the plan will recommend action, including design and construction schedules. The flow schedules stated above will be amended as appropriate on the basis of such removal or modification of Almaden Dam.

(B) Almaden Lake. The plan will evaluate alternatives, including a bypass channel, to isolate Almaden Lake from Alamitos Creek and Guadalupe Creek, and to screen flow entering Almaden Lake to prevent entrainment and impingement of steelhead trout and salmon. If a feasible alternative exists, the plan will recommend action, including design and construction schedules. The plan will be completed no later than seven years and one day after the Effective Date.

6.6.2.1.4 Calero Creek. Unless modified under paragraph 6.3, SCVWD will make flow releases from Calero Reservoir as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support steelhead trout and salmon spawning and egg incubation. SCVWD will make reservoir releases from Calero Reservoir for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

(B) February 1 to April 30. If it is safe to do so, pulse flow releases will be made from Calero Reservoir to facilitate up-migration of adult steelhead trout and out-migration of steelhead trout and chinook salmon smolt. The SCVWD will make pulse flow releases in accordance with the reservoir operations rule curves contained in Appendix E.

6.6.2.1.5 Los Gatos Creek. Unless modified under paragraph 6.3, SCVWD will make flow releases from Lexington Reservoir, Vasona Reservoir, or Vasona Pump Station, or any combination thereof, as provided below.

(A) November 1 to April 30. SCVWD will provide a suitable winter base flow in order to support chinook salmon spawning and egg incubation. SCVWD will make releases for the purpose of providing winter base flows in accordance with reservoir operations rule curves contained in Appendix E.

6.6.2.2 Phase Two Measures. Subject to paragraph 6.1.2, Additional Measures will be defined by the Phase One feasibility studies. Following such studies, if the Overall Management Objectives have not been met, the AMT may undertake periodic review of reaches within Los Gatos Creek below Lexington Reservoir, to identify opportunities for Additional Measures that may be implemented in Phases Two and Three, specifically to increase access to spawning or juvenile rearing habitat. The menu of potential measures includes:

(A) Remove or address Priority No. 2 barriers owned by SCVWD.

(B) Use recycled or other urban water to augment instream flows in the Guadalupe main stem or its tributaries.

(C) Implement a trap-and-truck operation to relocate adult steelhead trout into upper watershed habitat above Almaden Reservoir.

(D) Construct a bypass channel or other modification necessary to isolate Alamitos Creek from Lake Almaden.

(E) Remove or modify Almaden Reservoir to allow for unimpeded access to upper watershed habitat.

6.6.2.3 Phase Three Additional Measures. Subject to paragraph 6.1.2, Additional Measures not implemented in Phase Two will be implemented as needed to achieve Overall Management Objectives.

6.7 Phase Four - Continuing Actions

6.7.1 Maintenance of Flows. SCVWD will continue to provide instream flows in accordance with paragraphs 6.2 through 6.6, inclusive, in Phase Four as long as SCVWD diverts water under its Licenses and Permit, unless modified under paragraph 6.3.

6.7.2 Long-Term Monitoring. Long-term monitoring will continue as part of Phase Four. The cost of such monitoring will be limited to a financial expenditure by SCVWD of an amount not to exceed 5 percent of the annualized cost for measures implemented during Phases One, Two and Three.

6.7.3 Maintenance of Non-Flow Measures. Maintenance of facility improvements and other non-flow measures will continue as part of Phase Four. SCVWD's financial responsibility for facilities that have been completed prior to the end of Phase Three will be limited to the actual average annual cost for monitoring and maintenance incurred under this Agreement during Phase Three. For any facilities completed after the end of Phase Three, SCVWD's financial responsibility will be increased to include the actual average annual cost for monitoring and maintenance of those facilities for the first 10 (ten) years following completion.

ARTICLE VII
ADAPTIVE MANAGEMENT

7.1 Adaptive Implementation. SCVWD will implement the measures required in paragraphs 6.2 through 6.7, inclusive, in an adaptive manner in order to effectively mitigate any adverse impacts on the steelhead trout and Chinook salmon fisheries and their habitat, resulting from SCVWD's water supply facilities and operations.

7.2 Adaptive Management Team. SCVWD and the other Parties will form an Adaptive Management Team (AMT). The AMT will comprise a single representative from each Party. Membership in this team may be open to other interested persons, with the consent of SCVWD and the other Parties. In a written application for membership, each such person will demonstrate: (A) commitment to implement the Settlement, (B) willingness to dedicate the time and other resources necessary for effective participation in the Adaptive Management Program, and (C) ability to add value to the existing membership. The AMT will be formed on the Effective Date, and the rules and procedures of the AMT will be developed by the AMT within sixty (60) days of the Effective Date. The rules and procedures will address the manner in which the Parties will participate in the Implementation of the Adaptive Management Program. The Parties will review and consent to all of the plans, studies, reports, and other measures required by the Agreement. The members of the AMT will exercise best efforts to reach decisions by consensus. If they are unable to reach a consensus, disputes may be resolved in accordance with the provisions of Article IX.

7.3 Adaptive Management Program. Within one year of the Effective Date, and in consultation with the AMT, SCVWD will develop and thereafter implement an Adaptive Management Program. The purpose of the Adaptive Management Program is to maximize biological and physical benefits material to the Overall Management Objectives through the choice and implementation of the most cost-effective flow and non-flow measures. In making such decisions, the AMT will take into consideration: inter-annual and seasonal variation in hydrologic conditions, other constraints and limiting factors that affect achievement of the Overall Management Objectives, and monitoring results of the actual performance of measures already implemented, and opportunities for such measures to provide multiple benefits in the form of improvements to habitat for other fish, wildlife, and plant species and, more generally, the ecological conditions of the Three Creeks. The program will include:

(A) Measurable objectives consistent with the Phase One, Two, and Three management objectives for the steelhead trout and salmon fisheries and their habitats in the watersheds subject to the Agreement. The measurable objectives will relate to those habitat qualities impacted by SCVWD's facilities and operations, given the Parties' recognition that SCVWD is not responsible under this Agreement for other environmental conditions that may limit the population or distribution of these fisheries. Measurable objectives will be developed for flow measures, including maintenance of suitable water temperatures for summer steelhead rearing, performance of fish passage facilities, and other non-flow measures

(B) Operation and maintenance procedures and performance standards for individual facilities to contribute to the achievement of such objectives.

(C) Systematic monitoring of fish populations and actual habitat conditions affected by the measures implemented under this Agreement, to determine whether the measures are contributing to achievement of the measurable objectives. During each phase, and on the basis of these monitoring results, the AMT will also evaluate the performance of the entire program in maximizing habitat quality and availability for steelhead and salmon within the framework of this Agreement. The assessment will also evaluate the performance of the program at each phase in reducing or eliminating limiting factors affecting various life stages of steelhead and salmon directly attributable to SCVWD facilities and operations.

(D) Modification of flow and non-flow measures and other requirements of paragraphs 6.2 through 6.7, as appropriate to remedy any continuing impairment of a beneficial use.

7.4 Coordination of Efforts. The AMT will coordinate its efforts with other adaptive programs operating in the Three Creeks, as appropriate.

7.5 Annual Report. The AMT will publish and distribute to the Parties according to paragraph 10.1 an Annual Report that describes: (i) SCVWD's actions pursuant to the Settlement, (ii) monitoring results, and (iii) plans for the subsequent year, to the extent known.

ARTICLE VIII
FUNDING

8.1 Initial Funding

8.1.1 Provided that the implementation measures set forth in Article VI and summarized in Appendix B satisfy the requirements of paragraph 6.1.2, a maximum of $42 million will be made available by SCVWD in each of the Phases One, Two and Three in accordance with the agreed-upon cost accounting methodology. Appendix C describes the estimated budget for implementation of all measures contained in Phase One. Appendix D provides a detailed description of the cost accounting methodology that will be used under the Agreement.

8.1.2 Budget carryover will be allowed between the phases if the Parties agree that the Overall Management Objectives have not been met in the prior phase. However, unspent funds will not be carried over if the Parties agree that the Overall Management Objectives have been met and no Additional Measures are required under this Agreement.

8.2 Additional Funding. The Parties will make best efforts to secure additional funds where available and appropriate for the purpose of performing additional restoration of the Three Creeks. However, the acquisition of additional funds does not replace or diminish SCVWD's commitment to provide the funds described in paragraph 8.1.1 above.

8.3 No State or Federal Funding. As provided in paragraph 4.2.8 above, implementation of this Agreement by FWS or NMFS is subject to the Anti-Deficiency Act, 31 United States Code section 1341 and the availability of appropriated funds. Similarly, implementation of this Agreement by DFG is subject to the availability of appropriated funds. This Agreement is not intended and will not be construed to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury or the State of California Treasury.

ARTICLE IX
DEFAULT, DISPUTE RESOLUTION AND REMEDIES

9.1 Dispute Resolution. Parties will exercise best efforts to reach consensus on all decisions arising under the Agreement, including (i) response to developments in regulatory review prior to the Effective Date; (ii) the Adaptive Management Program; and (iii) any proposed amendments to the Agreement. Unless the authorizing legislation of an agency (including any Party) with jurisdiction over a dispute resolved by this Agreement mandates a different procedure, all disputes among the Parties regarding this Agreement, including any disputes related to the consistency of the requested license and permit amendments by the SWRCB, will be addressed through non-binding ADR.

9.1.1 ADR Procedures. A Party claiming a dispute will give notice of the dispute within thirty (30) days of its actual knowledge of the event that gives rise to the dispute. The Parties participating in a dispute will devote the time, resources, and attention necessary to resolve the dispute expeditiously. If informal meetings do not resolve the dispute, the disputing Parties will select a neutral mediator to assist in further efforts. Unless otherwise agreed, the disputing Parties will implement promptly any final agreement reached, consistent with its applicable statutory and regulatory responsibilities.

9.1.2 Failure to Resolve Dispute. If the Parties fail to resolve the dispute in a manner satisfactory to them within 180 (one hundred and eighty) days of the initial notice of the dispute, any decision will be effective under the Agreement if it is supported by: (i) SCVWD and (ii) each regulatory agency with jurisdiction over the disputed measure. A Party that does not support the decision may be eligible to withdraw pursuant to paragraph 3.2.

9.1.3 Emergency Exception. In the event of an existing or threatened Emergency, a Party may immediately pursue its available remedies under this Agreement.

9.2 Default. The failure of any Party to perform its obligations under this Agreement, which failure continues for more than 90 (ninety) days after receipt of written notice from another Party, will constitute a default, unless the default is of a nature that it cannot be cured within 90 (ninety) days and the defaulting Party works continuously and diligently to remedy the default. Written notice by the other Party will be pursuant to paragraph 10.1, and will state the existence and the nature of such default.

9.3 Remedies

9.3.1 The Parties agree and recognize that the rights and obligations set forth in this Agreement are unique and of such a nature as to be inherently difficult or impossible to value in money damages. Accordingly, the Agreement will be enforceable in a court of equity by specific performance or injunction, and such specific performance or injunction will be the exclusive remedies available for alleged breach of this Agreement.

9.3.2 If the non-breaching Party fails to exercise or delays in exercising any right or remedy, the non-breaching Party does not thereby waive that right or remedy. Furthermore, no single or partial exercise of any right, power, or privilege precludes any further exercise of a right, power, or privilege granted by this Agreement or otherwise.

ARTICLE X
GENERAL PROVISIONS

10.1 Notice. Any notice under this Agreement will be written and distributed by first-class mail or comparable method of distribution and will be filed with the SWRCB. Any other notice will be provided by facsimile, electronic mail, or other reliable method of communication to the Parties. The list of authorized representatives of the Parties as of the Effective Date is attached as Appendix A. The Parties will provide notice of any change in the authorized representatives designated in Appendix A, and SCVWD will maintain the current distribution list of such representatives.

10.2 Governing Law. The Agreement will be construed under the laws of the State of California without giving effect to the principles of conflict of laws, with exclusive venue for all purposes proper only in the County of Santa Clara, State of California. The rights and duties of FWS and NMFS will be construed under the applicable federal authorities; and these agencies, by executing the Agreement, do not consent to the jurisdiction of a state agency or court. All activities undertaken pursuant to this Agreement will be in compliance with all applicable laws. Nothing herein will be construed as limiting the lawful discretion of FWS and NMFS in accordance with applicable laws.

10.3 Non-Severability. The paragraphs of this Agreement are not severable. This Agreement is executed on the understanding that each paragraph is in consideration of the others.

10.4 Good Faith. Wherever in this Agreement a Party has a right to approve an act of another Party, the former will exercise such discretion in good faith and according to reasonable standards. Similarly, where a Party is required to satisfy a condition or complete an act in a certain fashion or within a specified time period, that Party will pursue such objectives in good faith and make all reasonable efforts to accomplish the same; the other Party will likewise in good faith cooperate and assist the other Party in accomplishing this task to cause the consummation of the agreement as intended by the Parties and evidenced by this Agreement.

10.5 Other Instruments. Each Party will, wherever and as often as reasonably requested by another Party, execute, acknowledge and deliver or cause to be executed, acknowledged and delivered, any and all documents and instruments as may be necessary or proper in the reasonable opinion of the requesting Party.

10.6 Signatures - Counterparts. This Agreement may be initialed or signed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. The Parties authorize each other to detach and combine original signature pages and consolidate them into a single identical original. Any of such completely executed counterparts will be sufficient proof of this Agreement.

10.7. Successors and Assigns. This Agreement will be binding and will inure to the benefit of the Parties and their respective heirs, legal representatives, successors and permitted assigns, except as restricted by this Agreement.

10.8. Waiver. No waiver of any provision or consent to any action will constitute a waiver of any other provision or consent to any other action, whether or not similar. No waiver or consent will constitute a continuing waiver or consent or commit a Party to provide a waiver in the future except to the extent specifically stated in writing. Any waiver given by a Party will be null and void if the Party requesting such waiver has not provided a full and complete disclosure of all material facts relevant to the waiver requested. No waiver will be binding unless executed in writing by the Party making the waiver.

10.9 Authorizations. All individuals executing this Agreement and other documents on behalf of the respective Parties certify and warrant that they have the capacity and have been duly authorized to so execute the documents on behalf of the Party so indicated. Each signatory will hold the other Parties harmless from any and all damages, costs, attorneys' fees, and other expenses.

10.10 Advice of Attorneys. Each Party represents and warrants that in executing this Agreement, each has been advised by and has relied upon independent legal counsel, that the terms of this Agreement have been read and their consequences have been completely explained by said counsel, and that each Party fully understands the terms of the Agreement. Each Party further acknowledges and represents that, in executing this Agreement, it has not relied on any inducements, promises or representations made by any other Party or its representatives, except as otherwise stated in this Agreement.

10.11 No Third Party Rights. Nothing in this Agreement, whether express or implied, is intended to confer any rights or remedies on any person other than the Parties to this Agreement and their respective successors and assigns. Nothing in this Agreement is intended to relieve or discharge the obligations or liability of any third persons to any Party to this Agreement.

10.12 Entire Agreement and Amendment. With respect to the issues considered herein, this Agreement contains the entire understanding and agreement of the Parties. There have been no promises, representations, agreements, warranties or undertakings by any of the Parties, either oral or written, of any character or nature binding except as stated in this Agreement. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the Parties to this Agreement and by no other means. An amendment to the Agreement is binding only on the Parties that execute the Amendment. Each Party waives its right to claim, contest or assert that this Agreement was modified, cancelled, superseded or changed by any oral agreement, course of conduct, waiver or estoppel.

SANTA CLARA VALLEY WATER DISTRICT

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

UNITED STATES DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE

DATED May 27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

CALIFORNIA DEPARTMENT OF FISH AND GAME

DATED 5-27-03, 20__ INITIALED CGW

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT

DATED 5-27-03, 20__ INITIALED _____

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

TROUT UNLIMITED

DATED 5/21/, 2003 INITIALED _____

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS

DATED 5/27, 2003 INITIALED RMC

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

CALIFORNIA TROUT, INC.

DATED 5/27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

URBAN CREEKS COUNCIL

DATED 5/27, 2003 INITIALED _____

DATED _____, 20___ EXECUTED _____

Approved as to Form

Dated _____, 20___ By _____

NORTHERN CALIFORNIA COUNCIL OF FEDERATION OF FLY FISHERS

DATED 5/21, 2003 INITIALED

DATED _____, 20__ EXECUTED _____

Approved as to Form

Dated _____, 20__ By _____

EXHIBIT A

SCVWD Licenses and Permit in the Three Creeks

(1) Coyote Watershed

Coyote Creek		
License #007211	1937	24,560 AFY
License #002210	1937	5,000 AFY
License #007212	1951	71,100 AFY
License #010607	1965	20,180 AFY
Penitencia Creek		
Permit #006565	1946	3,500 AFY

(2) Guadalupe Watershed

Guadalupe Creek		
License #006943	1928	3,302 AFY
License #002206	1937	3,500 AFY
License #002837	1939	0.770 CFS
Los Gatos Creek		
License #011791	1928	9,090 AFY
License #006944	1937	1,684 AFY
License #005729	1950	30,000 AFY
Almaden Creek		
License #002205	1937	2,500 AFY
License #002209	1934	6,000 AFY
Calero Creek		
License #002208	1937	3,500 AFY

(3) Stevens Creek Watershed

Stevens Creek		
License #002207	1937	4,000 AFY

EXHIBIT B
Proposed SWRCB Form of Approval

A condition precedent to the implementation of the Agreement is that the SWRCB make findings, based upon substantial evidence, in a manner substantially similar to the findings set forth in Paragraph A herein ("Findings"); issue a decision or order approving the Agreement; and condition the Licenses and Permit described in Exhibit A in a manner substantially similar to the provision set forth in Paragraph B herein ("Request for Continuing Jurisdiction").

A. Findings

1. SCVWD in Compliance With All Applicable Laws. "SCVWD's diversion, storage and use of water under its existing SWRCB Licenses and Permit for Stevens Creek, Coyote Creek and Guadalupe Creek, as modified by Articles VI – IX of the Agreement and this Order, are in compliance with Article X, Section 2 of the California Constitution, the California public trust doctrine, and all related laws within the SWRCB's jurisdiction."

2. SCVWD May Divert, Store and Use Water Under its Licenses and Permit. "SCVWD's diversion, storage and use of water under its existing SWRCB Licenses and Permit as modified by Articles VI – IX of the Agreement and this Order, are in full compliance with such Licenses and Permit."

3. SWRCB Anticipates No Further Measures Beyond the Settlement. "SCVWD will make substantial improvements in facilities and operations to implement Articles VI - IX of the Agreement and this Order at great cost to SCVWD and its rate-payers. Based on this fact and Findings 1 and 2 above, and so long as SCVCWD complies with the Agreement and this Order, the SWRCB does not anticipate that SCVWD will be required to take additional measures related to its Licenses and Permit other than those required by the Agreement and this Order to address instream flow needs for Stevens Creek, Coyote Creek and Guadalupe River."

4. Resolution of Complaint and Compliance With All Applicable Laws. "SCVWD and all other Parties to the Agreement have agreed to resolve this matter by establishing those measures stated in Articles VI – IX of the Agreement, and by asking the SWRCB to exercise continuing jurisdiction over the District's Licenses and Permit as stated in Paragraph B below. We find that these requirements will maintain compliance of the District's operations with Article X, Section 2 of the California Constitution, the California public trust doctrine, and all related laws under the SWRCB's jurisdiction."

B. Request for Continuing Jurisdiction

Once every ten years following issuance of the SWRCB's Order, the SWRCB will request, from the Parties and any other interested party, an update as to the SCVWD's compliance with the Agreement and this Order and whether there has been a substantial change in circumstances that affects the SWRCB's finding made in Finding 1 above. If the SWRCB determines that SCVWD is in compliance and there has been no substantial change in circumstances that affects the SWRCB's finding made in Finding 1, the SWRCB will issue a supplemental order further finding and declaring that SCVWD's diversion, storage and use of water from Stevens Creek, Coyote Creek and Guadalupe Creek are in compliance with Article X, Section 2 of the California Constitution, the public trust doctrine and all related laws under the SWRCB's jurisdiction.

EXHIBIT C

ESA Compliance

Tthe form of NMFS and FWS approvals associated with Section 7, Section 10 and no surprises assurances of the ESA that must be obtained before the Settlement can be effective are as follows:

Activity	NEPA	CWA §404	ESA §7	ESA §10	No Surprises
Wetted Channel	Yes	Yes	Yes	No	No
Non-wetted Channel	Yes	No	No	Yes	Yes
Water Operations and Maintenance	Yes	No	No	Yes	Yes

This Table illustrates the Parties agreement that a Settlement activity that involves "wetted channel" will require NEPA review,a Clean Water Act Section 404 permit, and ESA-appropriate no-jeopardy, incidental take permission. Conversely, Settlement activities related to water operations and maintenancewill require NEPA review, but would not a Clean Water Act Section 404 permit and thus no Section 7 compliance. However, such activity could be covered under Section 10 through an HCP and a no-surprises assurance.

APPENDIX A

Authorized Representatives of the Parties Signatory to the Agreement

Stanley M. Williams
Santa Clara Valley Water District

Susan Moore
United States Department of the Interior, Fish and Wildlife Service

Richard McMurtry
United States Department of Commerce, National Marine Fisheries Service

Carl Wilcox
California Department of Fish and Game

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Richard Roos-Collins
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Pacific Coast Federation of Fishermen's Associations

Mondy Lariz
California Trout, Inc.
San Francisco Bay Urban Creeks Council
Northern California Council of Federation of Fly Fishers

APPENDIX B
Proposed Schedule of Implementation

Phase 1 (Years 1-10)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates
District Owned Passage Barrier Removal
Non-District Owned Passage Barrier Removal
Gravel Replenishment
Riparian Cover In-Fill
Instream Habitat Enhancement
Geomorphic Functions Pilot Project
Hypolimneal Aeration Project
Multi-Port Outlet Project

Studies

Fish Habitat Restoration Plan
Geomorphic Functions Plan
ARWT Feasibility Study
Trap & Truck Feasibility Study
Alamitos Creek Feasibility Study
Coyote Valley Feasibility Study
Multi-Port Feasibility Study
Cherry Flat Reservoir Operations Plan
Coyote Percolation Facility Operations Plan

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 2 (Years 11-20)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 3 (Years 21-30)

Measures
Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates

Adaptive Management

Biological Monitoring
Program Administration
Supplemental Studies (as needed)
Additional Measures (as needed)

Phase 4 (Years 31-and beyond)

Measures

Summer Rearing Flows
Winter Base Flows
Pulse Passage Flows
Ramping Rates
Maintenance of facilities and projects undertaken in Phases 1-3.

Adaptive Management

Biological Monitoring
Program Administration

APPENDIX C
Proposed Budget For Implementation

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Flow Elements											
Summer Rearing Flows		(The cost of implementing various flow elements will vary on an annual basis as a result of variation in annual hydrology.									$0
Winter Base Flows		As a result, no estimated costs have been provided.)									$0
Pulse Passage Flows											$0
Cherry Flat Cooperative Ops Plan	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000
Passage Barriers											
Priority #1 (District)	$1,460,000	$1,460,000	$1,460,000	$0	$0	$0	$0	$0	$0	$0	$4,380,000
Priority #1 (Non-District)	$0	$0	$500,000	$1,000,000	$1,000,000	$500,000	$0	$0	$0	$0	$3,000,000
Habitat Restoration											
Fish Habitat Restoration Plan	$50,000	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$100,000
Gravel Replenishment	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
Riparian Cover In-Fill	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
In-Stream Habitat Enhancement	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
Geomorphic Functions Plan	$0	$400,000	$400,000	$400,000	$0	$0	$0	$0	$0	$0	$1,200,000
Geomorphic Functions Pilot Projects	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$0	$0	$0	$3,000,000
Capital Improvement Projects											
Hypolimneal Aeration	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$50,000
Multi-Port Outlet	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,000
Feasibility Studies											
ARWT Feasibility Study	$0	$0	$0	$0	$0	$0	$1,500,000	$1,500,000	$1,000,000	$0	$4,000,000
Trap & Truck Feasibility Study	$0	$0	$0	$0	$0	$200,000	$200,000	$200,000	$0	$0	$600,000
Alamitos Creek Feasibility Study	$0	$0	$0	$0	$0	$500,000	$500,000	$0	$0	$0	$1,000,000
Coyote Valley Feasibility Study	$0	$0	$0	$0	$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0	$4,000,000
Multi-Port Feasibility Study	$0	$0	$0	$0	$50,000	$0	$0	$0	$0	$0	$50,000
Adaptive Management											
Biological Monitoring		(The cost of implementing biological monitoring and other scientific studies associated with a long-term adaptive									
Program Administration		management program are not known at this time. Additional program development will be necessary to complete a									
Supplemental Studies		program budget.)									
Additional Measures											
Annual Total	$2,260,000	$2,510,000	$2,960,000	$2,000,000	$2,650,000	$3,800,000	$4,800,000	$3,300,000	$2,600,000	$600,000	$27,480,00

APPENDIX D
Cost Accounting Methodology

The following costs will apply towards the maximum funds permitted under paragraph 8.1.1.

1. **Capital Improvements:** actual costs including land, building, structures & improvements, and equipment, furnishings & fixtures associated with capitalized projects under the settlement.

2. **Water Supply Management:** actual costs to replace water lost to groundwater recharge as a result of implementing the Agreement when compared to normal or historic SCVWD operations in similar circumstances. These costs including water purchases and associated transmission costs.

   - SCVWD will document the water loss. Replacement water costs will be calculated based on multiplying the volume of replacement water by the District's unit cost of supply, as defined below and adjusted annually by the change in the Consumer Price Index.

   - The unit cost of supply will be based on $386 per acre-foot (in 1996 dollars, as estimated in the District's 1997 IWRP) and will increase annually by the change in the Bureau of Labor Statistics Consumer Price Index. The unit cost of supply in fiscal year 2002-03 is $428 per acre-foot (2001CPI of 177.1 divided by 1996 CPI of 156.9 or 1.11 times $386).

   - At the end of each 10-year period, if the unit cost of supply is less than 75 percent of the District's price for delivering treated water, the unit cost for the first year in the ensuing 10-period will be established at 90 percent of the price of treated water in the first year of the 10-year decade.

3. **Research and Environmental Studies:** actual costs associated with research, feasibility studies, and plan/program development.

   Each of the cost categories above may be comprised of labor, services, supplies & operating costs, overhead allocation, and debt service

   - Labor—includes direct salaries and employee benefits

   - Services, supplies, and operating costs—Includes, but not limited to, engineering services, repair & maintenance services, scientific & technical services, materials & supplies, travel, etc.

   - Overhead allocation—Includes the standard District overhead allocation

   - Debt service—Includes the interest charges on money borrowed to fund capital costs. The interest rate is based on the most recent long term borrowing cost (Series 2000A revenue bonds) of 5.1975 percent for a period not to exceed 30 years, or when the aforementioned debt is paid off by the district.

Note: Fish passage remediation costs spent prior to the Effective Date of this Agreement will apply toward the maximum amount provided in paragraph 8.1.1, in amounts as follows:

Project	Total Cost	Grants or Other Funding	Net Cost
Guadalupe River Fish Passage Projects – Hillsdale Ave Bridge; SJWC Low-Flow Road Crossing	$382,000	$178,000	$204,000
Stream Flow Station 35	$1,870,000	$167,000	$1,703,000
Total	$2,252,000	$345,000	$1,907,000

APPENDIX E
Reservoir Operations: Section 1

ELEMENTS COMMON TO ALL WATERSHEDS

Ramping Rates

Discharge rating curves indicating the outlet flow rate resulting from the outlet valve position over a range of storage conditions will be utilized for ramping at each of the reservoirs. The discharge rating curves will be reviewed annually and the results of the review will be included in the annual report on reservoir operations.

Reservoir flood releases, fisheries passage releases, and other planned (non-emergency) operations flow changes using the following criteria:

Flow Decrease of 50 cfs or Less

For decreases in flow of 50 cubic feet per second (cfs) or less, ramping is required when the total decrease in flow is greater than 50 percent of the total original flow. Ramping will occur over a period of up to 36 hours, with ramping performed in a maximum of four (4) increments with a target of 50 percent reduction in successive incremental flows. Adjustments in flow will be equally timed over the ramping period (i.e., at approximately 1 [start], 12, 24, and 36 hours for the maximum 36-hour ramping period). In addition, incremental flows will be adjusted to maintain a minimum change between successive increments of 2 cfs. The actual number of incremental adjustment, with a maximum of four (4), will be based on the following equation:

$$\text{Number of Increments} = 1/(\text{LOG}_{(\text{End Flow/Start Flow})}0.5)$$

Flow Decrease of 50 cfs or Greater

For decreases in flow greater than 50 cfs, ramping is required when the total decrease in flow is greater than 50 percent of the total original flow. Ramping will occur over a period of up to 72 hours, with ramping performed in a maximum of (7) increments with a target of 50 percent reduction in success incremental flows. Adjustments in flow will be equally timed over the ramping period (i.e., at approximately 1 [start], 12, 24, 36, 48, 60, and 72 hours for the maximum 72-hour ramping period). In addition, incremental flows will be adjusted to maintain a minimum change between successive increments of 2 cfs. The actual number of incremental adjustment with a maximum of seven (7) will be based on the following equation:

$$\text{Number of Increments} = 1/(\text{LOG}_{(\text{End Flow/Start Flow})}0.5)$$

Success Criteria

The success criteria for releases will be based on a 3 day rolling average of flow measurements conducted at the existing stream flow gages located just downstream of the dams. Flow measurements will be incorporated into the annual report.

Winter Base Flow Releases

Winter base flow releases will not be increased until there is adequate storage above a given curve which will allow for 5 days of releases at the higher release rate. Flow reduction will be made once the storage falls below a given curve.

Flood Rule Curves

Reservoirs are operated to storage flood rule curve which specify target maximum storage levels for specific dates between December 1 and April 30. When safe to do so, reservoir releases will be made to maintain maximum storage levels.

ELEMENTS SPECIFIC TO EACH WATERSHED

Coyote Creek Watershed

Imported water temporarily stored in Anderson Reservoir will not be included in volume calculations for habitat management programs.

Winter Base Flow

Anderson and Coyote Reservoirs will be operated to the rule curves as shown in Figure 1 and Figure 2 included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Anderson Reservoir from November 1 to April 30 to support steelhead trout and Chinook salmon. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 26 cfs or that flow rate required for recharge will be released past the upstream end of Coyote Canal. Releases to the raw water distribution system are also allowed when the reservoir storage is in this zone. As storage decreases, or if storage never reaches the 26 cfs winter base rule curve, a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 82 (SF–82) located downstream of Anderson Dam. The release determined from the combined storage may be made from Anderson Reservoir or the Santa Clara Conduit or some combination of both provided the total required release is made.

Pulse Flow

Pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout to reach suitable spawning habitat and for out-migration of juvenile steelhead and Chinook salmon. If the combined storage of Anderson Reservoir and Coyote Reservoir exceeds the pulse flow rule curve which is a combined storage of 80,000 acre-feet and when it is safe to do so, 50 cfs will be released from Anderson Reservoir through the outlet or the Anderson Hydroelectric Facility or some combination of both. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–82. Flood releases and spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered a pulse flow event.

Summer Rearing

Releases from Anderson Reservoir will be made from May 1 to October 31 to maintain a water temperature not to exceed 18 degrees C throughout as much of the cold water management zone as available cold water storage will allow. The cold water management zone is the reach of Coyote Creek from the outlet of Anderson Dam to the old Riverside Golf Course entrance. Between April 15 and 30 of each year, a temperature survey of Anderson Reservoir (and if required Coyote Reservoir) will be conducted to determine the available hypolimnetic volume with a temperature of 14 degrees C or less. If required, additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

Flow will be released through the Anderson Reservoir outlet or the Anderson Hydroelectric Facility outlet at a rate sufficient to maintain a continuous flow of water with a temperature less than 18 degrees C in the cold water management zone and a minimum flow of 1 cfs at the old golf course entrance. If there is not sufficient storage to satisfy this condition, the release will be equal to the total available cold water storage less estimated evaporation divided by 184 days.

If water from the Santa Clara conduit is 14 degrees C or less and the combined reservoir storage is adequate for summer releases, releases from the Santa Clara conduit to Coyote Creek may be substituted for releases from Anderson Reservoir. Storage in excess of the requirements outlined above may be released to Coyote Creek, Coyote Canal, or used for treated water supply.

Stevens Creek Watershed

The cold water management zone for Stevens Creek is approximately 3.8 miles in length from the base of the Dam to approximately Hwy 280 and is located upstream of Heney Creek.

Winter Base Flow

Stevens Creek Reservoir will be operated to the rule curves as shown in Figure 3 included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Stevens Creek Reservoir from January 1 to April 30 to support steelhead trout. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 16 cfs will be released. As storage decreases or if storage never reaches the 16 cfs winter base rule curve, winter releases will be reduced. Releases will be monitored and recorded at Stream Flow Station 44 (SF–44) located downstream of Stevens Creek Dam. From November 1 through December 31, flows will be equal to or greater than those releases made for the previous water year's summer cold water program.

Pulse Flow

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout and for out-migration of juveniles. If the storage in Stevens Creek Reservoir exceeds the pulse flow rule curve which is equal to the 16 cfs winter base rule curve plus 250 acre-feet, 50 cfs will be released from Stevens Creek Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–44. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Rearing

Summer releases from Stevens Creek Reservoir will be made from May 1 to October 31 to maintain the cold water management zone as available cold water storage will allow. Between April 15 and 30 of each year, a temperature survey of Stevens Creek Reservoir will be conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C in order to maintain a water temperature not to exceed a daily maximum of 22 degrees C throughout the cold-water management zone.

If the available cold water volume would produce a cold water flow release of less than 1 cfs throughout the summer months then releases will not be limited to the calculated cold water release and releases up to the recharge capacity of the system will be allowed.

Guadalupe Watershed

Guadalupe Creek

The cold water management zone for Guadalupe Creek is approximately 3.3 miles in length from the base of the Dam to Camden Avenue

Winter Base Flow

Guadalupe Reservoir will be operated to the rule curves shown in Figure 4, included at the end of this Appendix. The curves consists of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining cold water storage for the summer release program.

Winter base flow will be released from Guadalupe Reservoir from November 1 to April 30 to support steelhead trout and Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 11 cfs will be released. As storage decreases or if storage never reaches the 11 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 17 (SF–17) located downstream of Guadalupe Dam. Flows may be diverted at Mason Diversion Dam provided there is at least 4 cfs flowing through the fish ladder.

Pulse Flow

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for adult steelhead trout and for out-migration of juvenile steelhead and Chinook salmon. If the storage in Guadalupe Reservoir exceeds the pulse flow rule curve which is equal to the 11 cfs winter base rule curve plus 250 acre-feet, 50 cfs will be released from Guadalupe Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–17. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Rearing

Summer releases from Guadalupe Reservoir will be made from May 1 to October 31 to maintain the cold water management zone as available cold water storage will allow. Between April 15 and 30 of each year, a temperature survey of Guadalupe Reservoir will be conducted to determine the available hypolimnetic volume with a temperature of 14 degrees C or less. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed 18 degrees C throughout the cold-water management zone.

If the available cold water volume would produce a cold water flow release of less than 1 cfs throughout the summer months, then releases will not be limited to the calculated cold water release and releases up to the recharge capacity of the system will be allowed. In addition, releases to Guadalupe Creek for recharge from the Almaden Valley Pipeline located below Camden Avenue will be allowed.

Alamitos Creek

The management zone for Alamitos Creek is from Almaden Dam to Lake Almaden. There is no cold water management zone for Alamitos Creek.

Winter Base Flow

Almaden Reservoir will be operated to the rule curves shown in Figure 5 included at the end of this Appendix. The curves consist of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining storage for release during the rest of the year.

Flow will be released from Almaden Reservoir from November 1 to April 30 to support Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 14 cfs will be released. As storage decreases or if storage never reaches the 14 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 16 (SF–16) located downstream of Guadalupe Dam.

Pulse Flows and Water Transfers

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for juvenile Chinook salmon out-migration. If the storage in Almaden Reservoir exceeds the pulse flow rule curve which coincides with the transfer curve, 50 cfs will be released from Almaden Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–16. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

If the reservoir storage from December 1 to January 31 exceeds the transfer curve as shown in Figure 10, water will be transferred to Calero Reservoir via the Almaden-Calero Canal. Pulse flows and water transfers to Calero may take place simultaneously provided there is adequate storage above the curve to meet the two pulse flow per season requirement. Otherwise, if less than two pulse flow events have taken place for the season, pulse flows have priority over water transfers.

Summer Release Program

Cold water releases from Almaden Reservoir are not required for the May 1 to October 31 time period. Instead releases will be made in order to achieve a minimum pool storage of 400 acre-feet on December 1.

Calero Creek

The management zone for Calero and Alamitos Creek is from Calero Dam to Lake Almaden. There is no cold water management zone for Calero Creek.

Imported water temporarily stored in Calero Reservoir will not be included in volume calculations for habitat management programs.

Winter Base Flow

Calero Reservoir will be operated to the rule curves shown in Figure 6. The curves consist of graduated winter base rule curves and will be utilized to provide winter base flows while maintaining storage for release during the rest of the year.

Flow will be released from Calero Reservoir from November 1 to April 30 to support Chinook salmon spawning and egg incubation. The specific flow rate will depend on the storage and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then 10 cfs will be released. As storage decreases or if storage never reaches the 11 cfs winter base rule curve a reduced winter flow will be released. Releases will be monitored and recorded at Stream Flow Station 13 (SF–13) located downstream of Calero Dam.

Pulse Flows

When it is safe to do so, pulse flow releases will be made between February 1 and April 30 to improve passage conditions for juvenile Chinook salmon out-migration. If the storage in Calero Reservoir exceeds the pulse flow rule curve, 50 cfs will be released from Calero Reservoir through the outlet. The reservoir will be operated in this manner until there are two periods of five consecutive days of flows greater than 50 cfs measured at SF–13. Spill events in excess of 50 cfs for five consecutive days between February 1 and April 30 will also be considered as a pulse flow.

Summer Release Program

Cold water releases from Calero Reservoir are not required for the May 1 to October 31 time period. Instead releases will be made in order to achieve an emergency pool storage of 4,000 acre-feet on December 1.

Los Gatos Creek

The management zone objective for Los Gatos Creek is from the Camden Avenue drop structure to the confluence with Guadalupe River. There is no cold water management zone

for Los Gatos Creek.

Winter Base Flow

Lexington Reservoir will be operated to the rule curves shown in Figures 7 and 8. For storages above the low storage rule curve and below the water supply rule curve, releases will be made so that there is 3 cfs at Stream Flow Station 50 (SF–50) located at Lincoln Avenue. For storages above the water supply rule curve releases will be made at the flow rate indicated by the curves to be measured at SF–50 and for water supply.

Winter base flow will be released from either Lexington Reservoir, Vasona Reservoir, imported supplies or a combination of all three from November 1 to April 30. The specific flow rate will depend on the storage in Lexington Reservoir and where that storage volume falls within the range of the graduated curves. If the storage is above the highest winter base rule curve then releases will be made to obtain 13 cfs at stream gage 50. As storage decreases or if storage never reaches the 13 cfs winter base rule curve a reduced winter flow will be released.

Pulse Flows

Pulse flows will be obtained through uncontrolled flows or during spill events. No additional releases will be made for pulse flows.

Summer Release Program

Cold water releases from Lexington Reservoir are not required for the May 1 to October 31 time period. Instead releases for recharge and water supply will be made in an attempt to maintain the recreation pool and a minimum pool storage of 2000 acre-feet on December 1.

FIGURE 1
ANDERSON/COYOTE RESERVOIRS OPERATION RULE CURVES

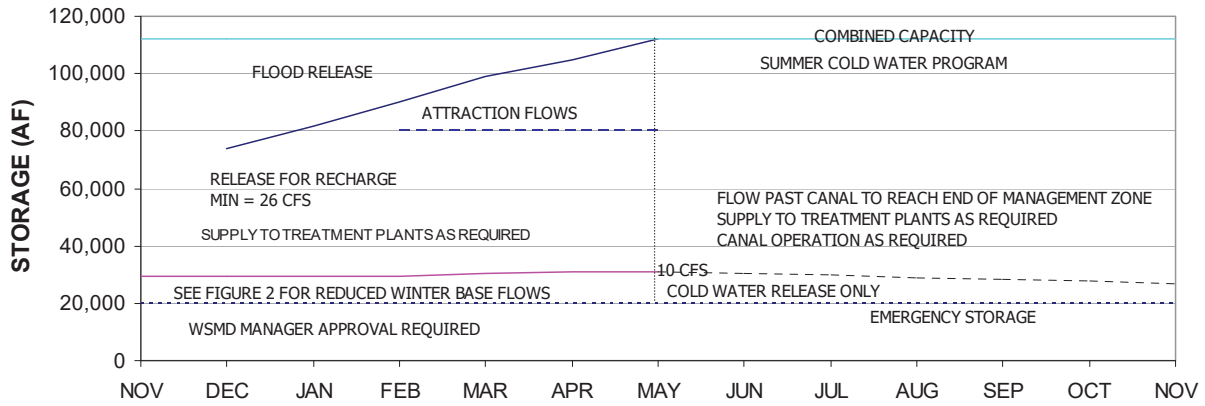


FIGURE 2
ANDERSON/COYOTE RESERVOIRS LOW STORAGE RULE CURVES

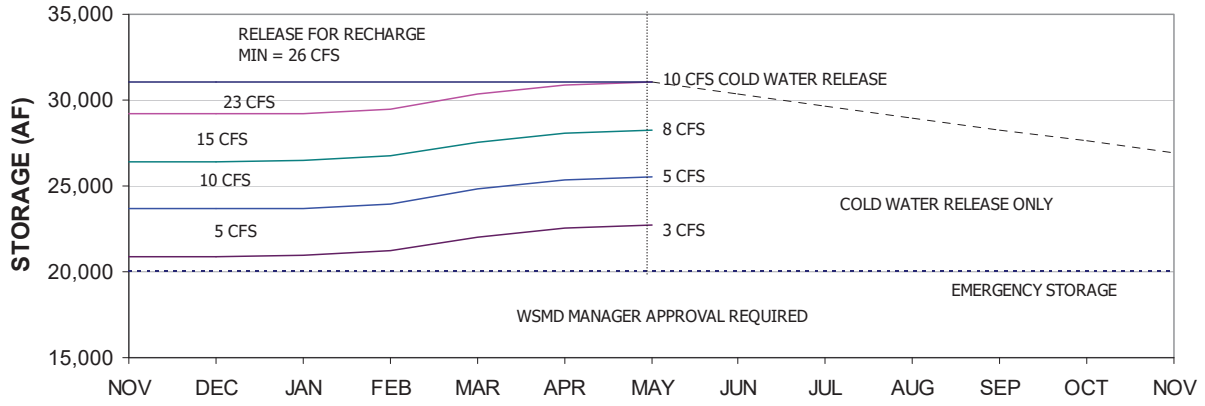


FIGURE 3
STEVENS CREEK RESERVOIR OPERATION RULE CURVES

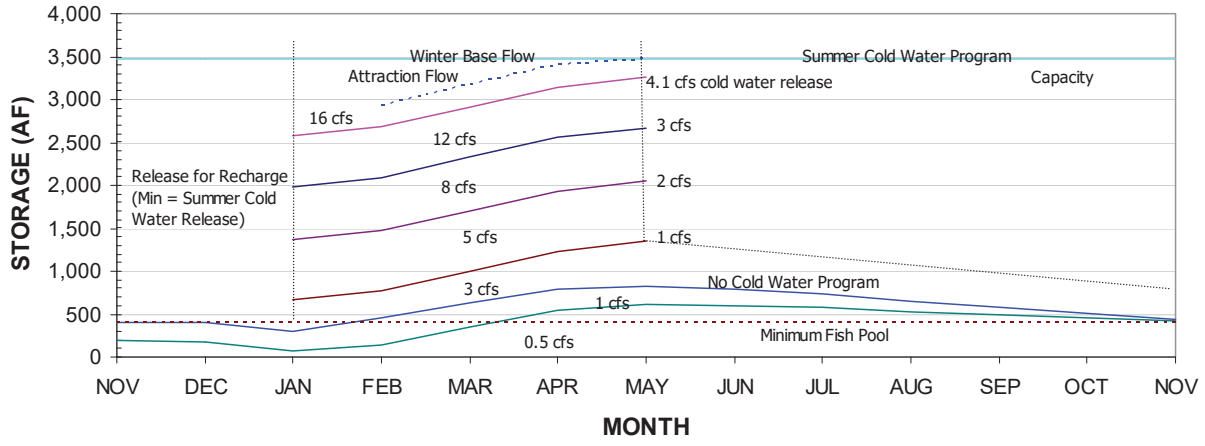
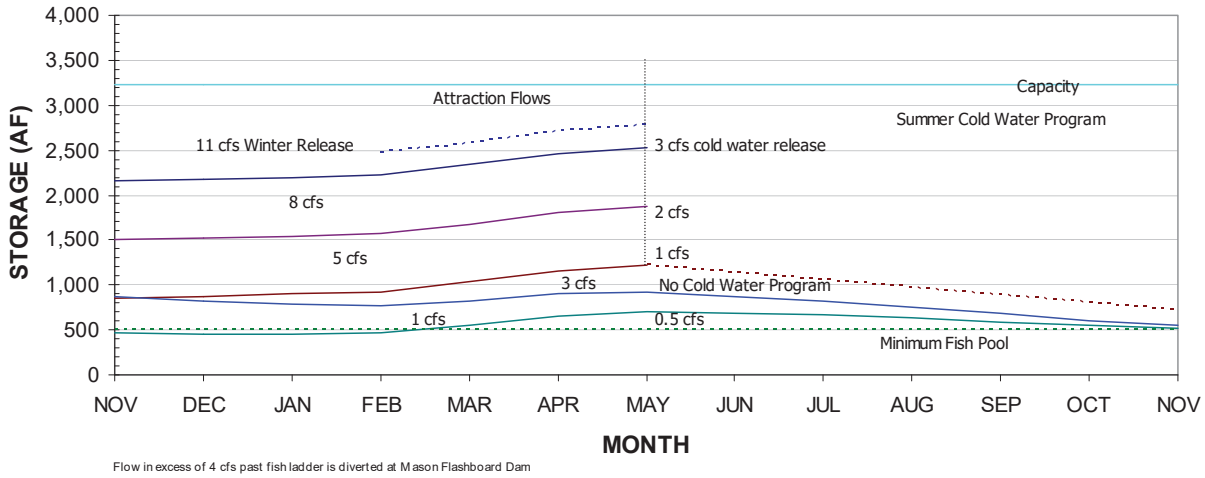


FIGURE 4
GUADALUPE RESERVOIR OPERATION RULE CURVES



Flow in excess of 4 cfs past fish ladder is diverted at Mason Flashboard Dam

FIGURE 5
ALMADEN RESERVOIR OPERATION RULE CURVES

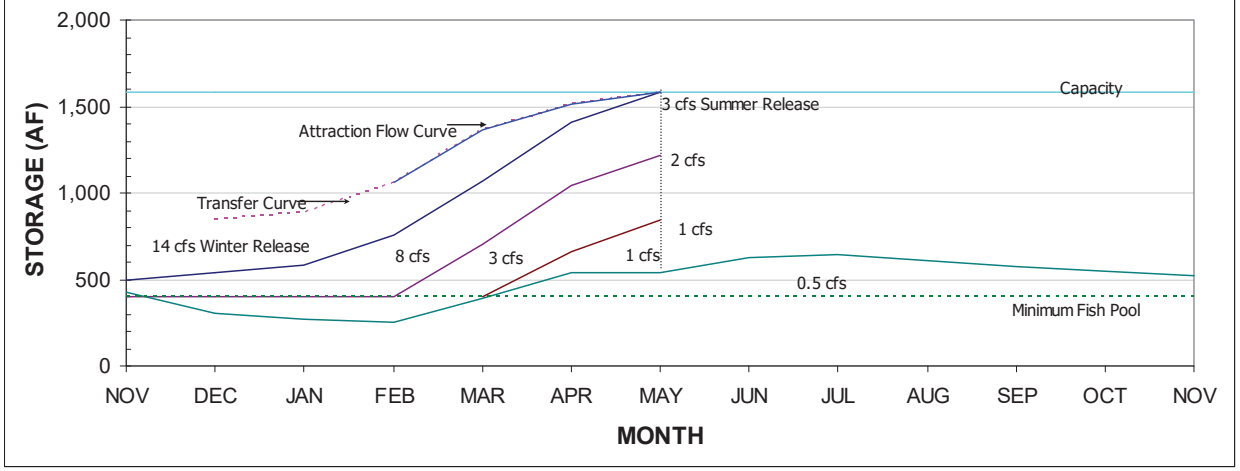


FIGURE 6
CALERO RESERVOIR OPERATION RULE CURVES

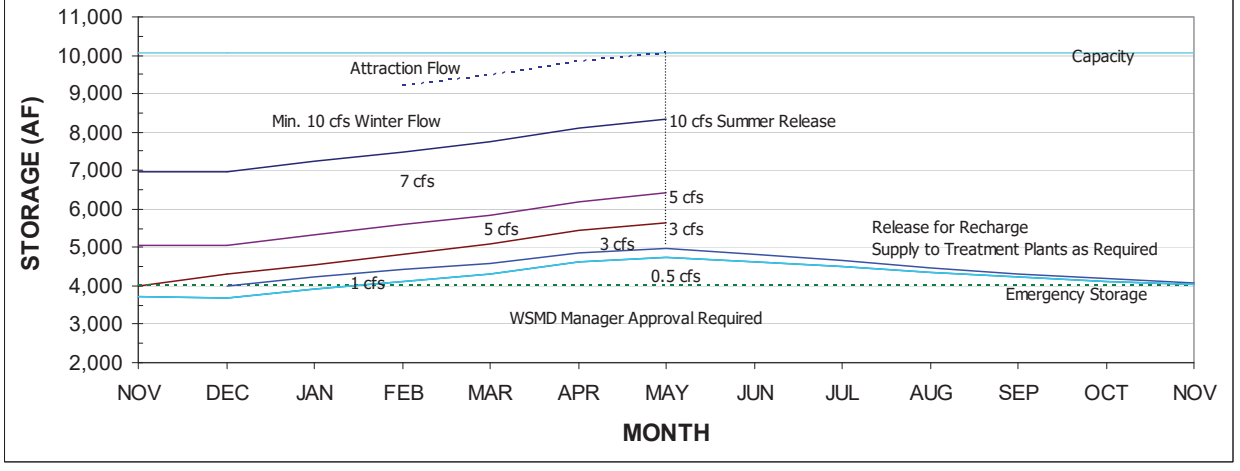


FIGURE 7
LEXINGTON RESERVOIR OPERATION RULE CURVES

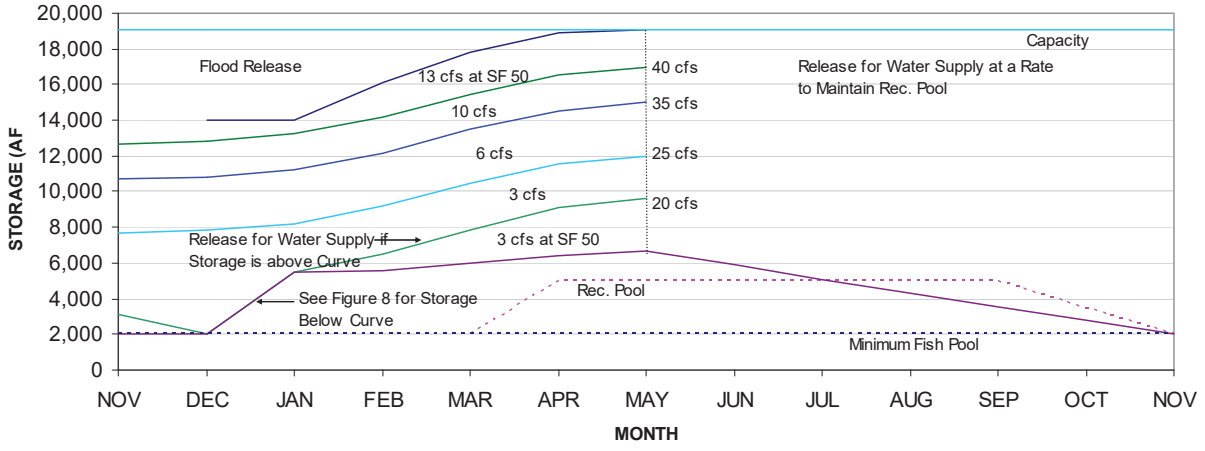
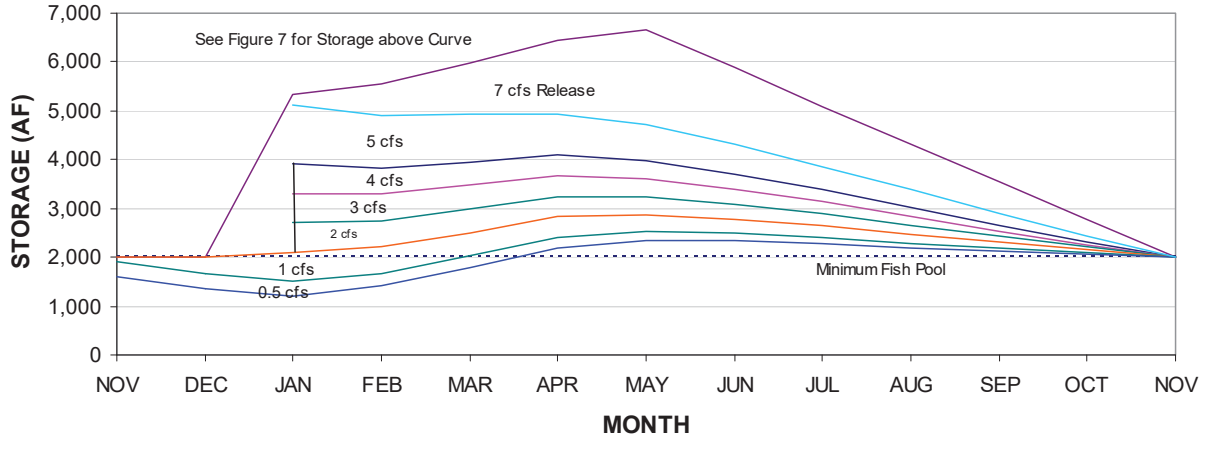


FIGURE 8
LEXINGTON RESERVOIR LOW STORAGE RULE CURVES



APPENDIX E
Reservoir Operations: Section 2

This section is intended to describe and further explain reservoir operations. It does not dictate or control how the reservoirs will be operated. The revised reservoir operations within the Coyote Creek Watershed, Stevens Creek Watershed and Guadalupe Watershed are described. More specifically, operations for Coyote and Anderson Reservoirs, Stevens Creek Reservoir, Guadalupe Reservoir, Almaden Reservoir, Calero Reservoir and Lexington Reservoir are discussed. Procedures will be developed for the daily operations of each of the reservoirs. These procedures will include tables to direct operations staff to release a specific flow rate based on the daily storage of the reservoir.

ELEMENTS COMMON TO ALL WATERSHEDS

Ramping Rates

Examples of flow ramping for decreases in flow of 50 cfs or less and flow decreases of 50 cfs or greater are included in Table 1 at the end of this TM. For example, if flood releases were made from Anderson Reservoir at 300 cfs and the desired end release following the completion of the flood release was 25 cfs, the table could be used to determine the number of increments and the associated flow releases. The table shows that for this example, 4 ramping increments are required and the following series of releases would be made at 12 hour increments: 300[begin], 161, 87, 47, 25[end]. The table also shows that the actual ramping factor is 0.46. In other words the flow is reduced by 46 percent between successive increments until the ending flow is reached. Specific beginning and ending release values can be input into the spreadsheet this table is derived from, and the incremental flow rates calculated.

Winter and Summer Time Periods

Reservoir operations are broken done into two time periods. Typically November 1st through April 30th is called the winter period and May 1st through October 31st is the summer period. This is the case for all reservoirs with the exception of Stevens Creek where the winter time period is from January 1st through April 30th.

Low Storage Rule Curves

If storage is extremely low, releases will be made based on the low storage rule curves. Under these conditions minimal releases will be made in order to maintain a wet creek for a short distance downstream of the reservoir. If inflow is poor and storage falls to these low levels, it is possible that 1 cfs or even 0.5 cfs would be released for both the winter and summer time periods. These curves are based on a 90 percent exceedence inflow probability and account for both estimated evaporation and the given release flow rate.

ELEMENTS SPECIFIC TO EACH WATERSHED

The following section includes information not already included in Appendix E on reservoir operations and flow requirements for each of the three watersheds and for the individual reservoirs within these watersheds.

COYOTE CREEK WATERSHED

The cold water management zone for Coyote Creek is approximately 6 miles in length from the base of the Dam to the old Riverside Golf Course entrance. This course has been renamed The Coyote Creek Golf Course. The limits of the cold water management zone are shown in Figure 1. The watershed area for Coyote and Anderson Reservoirs is 193 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the management zone is 9 mi^2.

Winter Base Flow Rule Curves

The winter base flow curves will be utilized to provide winter flows while maintaining cold water storage for the summer release program. The graduated winter base rule curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and emergency storage. The curve values for November 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage. The May 1 combined target storage is 31,050 acre-feet based on a combined emergency storage of 20,000 acre-feet, plus 5,050 acre-feet for summer cold water releases of 10 cfs from May 1 through October 31, plus 4,000 acre-feet of dead pool storage plus 2,000 acre-feet for evaporation.

STEVENS CREEK WATERSHED

The cold water management zone for Stevens Creek is approximately 3.8 miles in length from the base of the Dam to approximately Hwy 280 and is located upstream of Heney Creek. The limits of the cold water management zone are shown in Figure 2. The reservoir watershed area is 17.5 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the management zone is 2.5 mi^2. The uncontrolled watershed area between the dam and the end of the groundwater recharge zone is 4.7 mi^2.

Winter Base Flow Rule Curves

The graduated curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and minimum pool. The curve values for January 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage.

GUADALUPE WATERSHED

Figure 3 shows the Guadalupe Watershed.

GUADALUPE CREEK

The Guadalupe Reservoir watershed area is 6 mi^2 and the approximate uncontrolled watershed area between the dam and the end of the cold water management zone is 7 mi^2. The cold water management zone for Guadalupe Creek is approximately 3.3 miles in length from the base of the Dam to Camden Avenue. The limits of the cold water management zone are shown in Figure 4.

Winter Base Flow Rule Curves

The graduated curves were constructed by first determining the required May 1 storage for a given cold water release plus the estimated evaporation and minimum pool. The curve values for November 1 through April 30 are constructed by summing historic inflows with a 90 percent exceedence probability and subtracting this from the May 1 storage.

ALAMITOS CREEK

There is no cold water management zone for Alamitos Creek. The reservoir watershed area is 12 mi^2 and the approximate uncontrolled watershed between the dam and the confluence with Guadalupe Creek excluding the Calero Creek watershed is 17.3 mi^2. The Alamitos Creek to the confluence with Guadalupe Creek is shown in Figure 5.

CALERO CREEK

There is no cold water management zone for Calero Creek. The reservoir watershed area is 7 mi^2 and the approximate uncontrolled watershed between the dam and the confluence with Alamitos Creek is 5.4 mi^2. The Calero Creek to the confluence with Alamitos Creek is shown in Figure 6.

LOS GATOS CREEK

The reservoir watershed area is 38 mi^2 and the approximate watershed area between the dam and the confluence with Guadalupe River is 17 mi^2. The Los Gatos Creek to the confluence with Guadalupe River is shown in Figure 7.

STEVENS CREEK RESERVOIR EXAMPLE

The following example demonstrates how Stevens Creek Reservoir might be operated using the rule curves included in Appendix E during average, dry and wet year conditions.

Initial Storage

The example includes the assumption that Stevens Creek Reservoir in the year prior to the example year was full on May 1 and a full summer cold water program was in effect. With a full reservoir on May 1, approximately 5 cfs of cold water could be released during the cold water release period from May 1 to November 1. The estimated resulting November 1 storage would be 1,460 acre-feet taking into account summer releases and estimated losses due to evaporation. This is designated as point 1 on Figure 8 and is the starting point for

each of the inflow conditions.

Inflow Conditions

Thirty years of historic inflows were used to calculate monthly inflows for average year, dry year and wet year inflow conditions. These monthly inflows were then input into the model with the initial storage discussed above in order to determine monthly storages and release flow rates.

Average Year Inflow

For this example the monthly average year reservoir inflow for each month is based on a 50 percent exceedence probability. In other words, based on the historic monthly inflow into Stevens Creek half the time more inflow could be expected and half the time less could be expected.

Dry Year Inflow

Inflow with a 95 percent exceedence probability was used for dry year inflow in this example. In other words 95 percent of years considered were "wetter" or had larger inflows than the values used for the dry year.

Wet Year Inflow

Wet year inflow conditions were based on a 10 percent exceedence probability. Only 10 percent of the years considered had inflow equal to or greater than the values used for the wet year. The monthly inflow for the three inflow conditions are shown in Table 2 below:

TABLE 1
Monthly Inflows

Month	Average Year Inflow Condition – 50% Exceedence Probability (acre-feet)	Dry Year Inflow Condition – 95% Exceedence Probability (acre-feet)	Wet Year Inflow Condition – 10% Exceedence Probability (acre-feet)
Nov	120	5	859
Dec	491	25	2799
Jan	1022	25	4978
Feb	1279	127	5949
Mar	1259	194	4544
Apr	597	25	2733
May	252	25	1190
Jun	153	11	504
Jul	63	0	293
Aug	42	0	169
Sep	25	0	169
Oct	29	0	300

Average Inflow Year Operations

Figure 8 shows the reservoir storages under the average year inflow conditions described above with Stevens Creek Reservoir operated to the curves included in Appendix E.

As Figure 8 shows, on November 1 the storage is at **Point 1**. As indicated on the figure, releases for November and December are for recharge with a minimum release equal to the cold water program of the previous water year. Since the summer release was 5 cfs, the releases for November and December are also 5 cfs. Winter base releases start on January 1 for Stevens Creek Reservoir.

Inflows during December allowed the reservoir to reach storage of approximately 2,700 acre-feet on January 1 as indicated as **Point 2a** in Figure 8. The operation rule curves indicate that a release of 12 cfs is required.

Inflow continues to raise the reservoir storage and **Point 3a** designates when the winter base flow should be increased to 16 cfs. The flow increase is not actually made until there is adequate storage above the 16 cfs release curve which will allow for 5 days of releases at the higher release rate. In other words, if the 16 cfs curve is at 2,600 acre-feet the increase will not be made until the storage reaches 2,760 acre-feet (2600 + 16 x 5 x 1.98 = 2,760). This is designed to prevent oscillations between adjacent winter base flow releases. The daily procedures tables will include this calculation and will clearly indicate when flow regulations are required.

Pulse flows are required from February 1 to April 30. Since the reservoir storage on February 1 is above the attraction flow rule curve, designated as **Point 4a**, a pulse release of 50 cfs for 5 consecutive days is released. Following the pulse release, flow is ramped backed down to 16 cfs since the storage is no longer above the pulse flow rule curve. The starting and ending ramping values are plugged into the spreadsheet shown in Table 1 and the following ramping flow rates are released at 12 hour increments: 50[begin], 28, 16[end]. Ramping takes place over 2 increments and a 24 hour time period.

Inflows are not large enough to compensate for the pulse flow and maintain storage in the 16 cfs winter release zone. At **Point 5a** the winter release is reduced to 12 cfs. This flow rate is maintained for the remainder of the winter base flow time period.

Between April 15 and 30, a temperature survey of Stevens Creek Reservoir is conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. This corresponds to **Point 6a**. The depth to cold water is calculated from field measurements and the rating curve is used to determine the volume of cold water. Assuming a depth to cold water of 21 feet there should be enough cold water to release approximately 3 cfs from May 1 to Nov 1. The flow will be ramped down from 12 cfs to 3 cfs over 2 increments and a 24 hour time period with the following release rates: 12[begin], 6, 3[end]. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C and a daily maximum temperature of 22 degrees C throughout the cold-water management zone. Additional

reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

Dry Inflow Year Operations

Starting again with the initial reservoir storage as discussed above, the storage on November 1 is at **Point 1**. Since the summer release was 5 cfs for the assumed full reservoir initial conditions, the releases for November and December are also 5 cfs.

Low inflows for November and December cause the reservoir storage to decrease to approximately 900 acre-feet on January 1 as indicated as **Point 2d** in Figure 8. The operation rule curves indicate that a release of 5 cfs is required. Since it is very early in the water year, moderate winter base releases are maintained since significant inflows are still possible.

As the winter continues on, reservoir storage continues to decrease reaching **Point 3d** and winter releases are cut to 3 cfs. At **Point 4d**, release are reduced to 1 cfs and a cold water program is not going to be possible without some late season inflow. By May 1, inflows do not materialize and there is not adequate storage to maintain a cold water program through October 1. Releases are made based on the low storage rule curves designed to maintain a wet creek below the dam. Releases are reduced to 0.5 cfs at **Point 5d**.

Wet Inflow Year Operations

Starting again with the initial reservoir storage as discussed above, the storage on November 1 is at **Point 1**. Since the summer release was 5 cfs for the assumed full reservoir initial conditions, the releases for November and December are also 5 cfs.

Inflows during November and December allow the reservoir to reach a storage of approximately 3,100 acre-feet on January 1 as indicated as **Point 2w** in Figure 8. The operation rule curves indicate that a release of 16 cfs is required.

Inflow continues to raise the reservoir storage and **Point 3w** depicts the time when pulse flows should begin. Since the storage remains above the pulse flow curve a second pulse release of 50 cfs for 5 consecutive days is released. Additional pulse flow releases are not required since two have already been performed for the winter. Following the pulse releases, flow may be ramped back down to 16 cfs or flood releases may be performed, if appropriate. Assuming a 16 cfs release, the starting and ending ramping values are plugged into the spreadsheet shown in Table 1 and the following ramping flow rates are released at 12 hour increments: 50[begin], 28, 16[end]. Ramping takes place over 2 increments and a 24 hour time period.

Inflows continue to raise the reservoir storage and the reservoir begins to spill at **Point 4w**. A winter base flow of 16 cfs or greater is maintained by spill or through releases. The reservoir remains full until May 1.

Between April 15 and 30, a temperature survey of Stevens Creek Reservoir is conducted to determine the available hypolimnetic volume with a temperature of 15 degrees C or less. This corresponds to **Point 5w**. Assuming a depth to cold water of 21 feet there should be enough cold water to release approximately 5 cfs from May 1 to Nov 1. The flow will be ramped down from 16 cfs to 5 cfs over 2 increments and a 24 hour time period with the following release rates: 16[begin], 9, 5[end]. The cold water volume will be released at a constant rate, in order to maintain a water temperature not to exceed a daily average temperature of 19 degrees C and a daily maximum temperature of 22 degrees C throughout the cold-water management zone. Additional reservoir temperature profiles will be established on a monthly basis from June through October and releases adjusted to correspond to changes in the measured hypolimnetic volume.

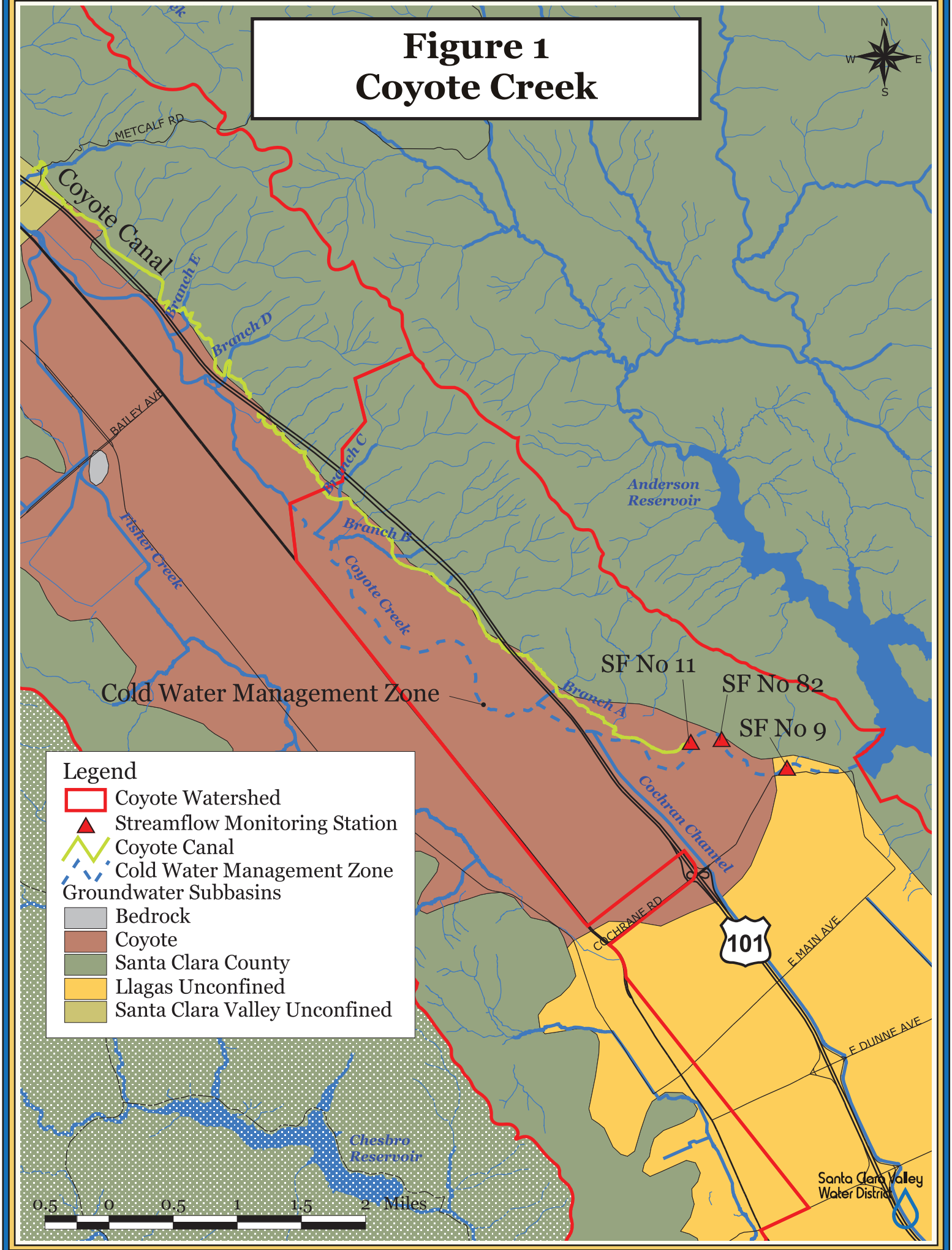
TABLE 2

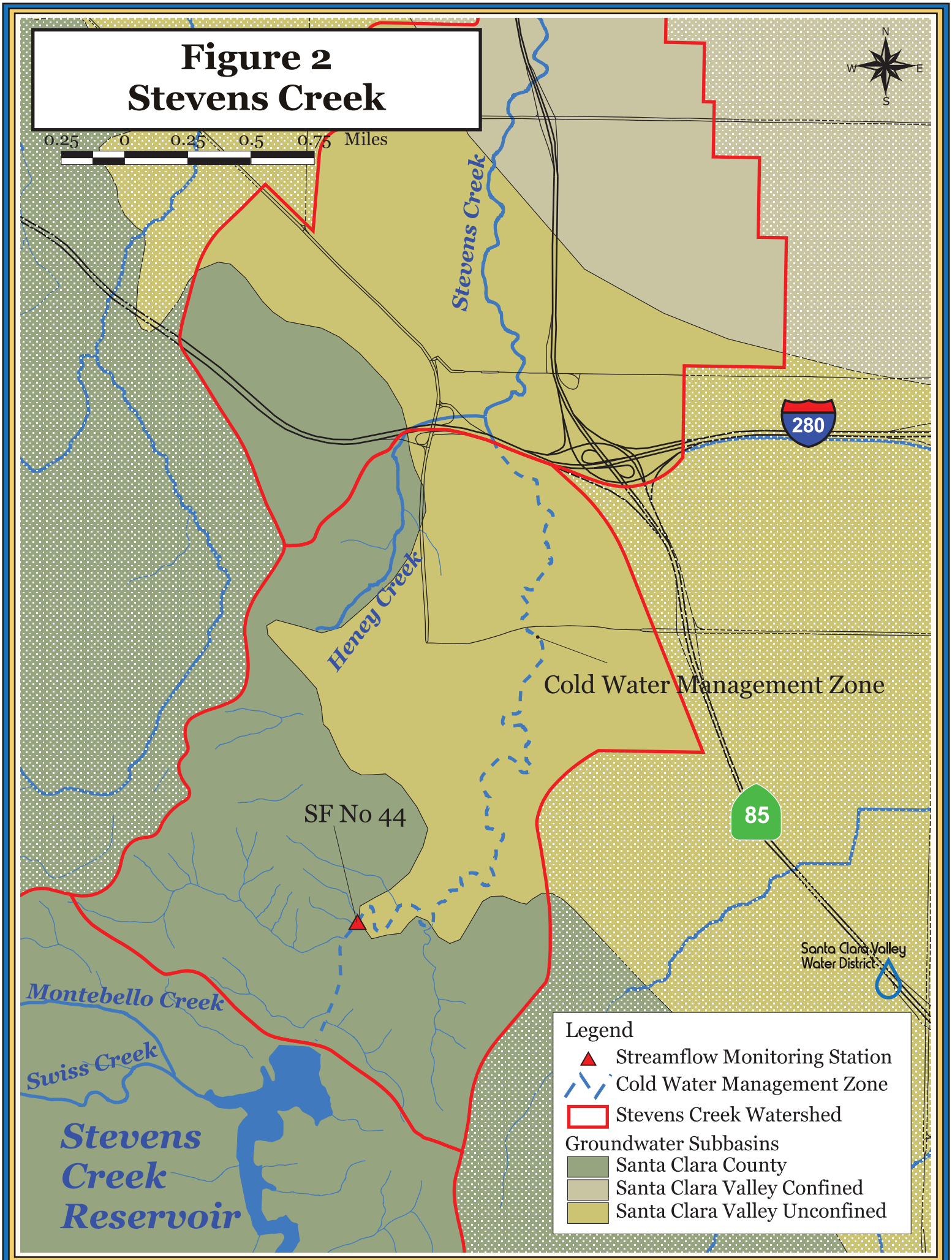
FLOW RAMPING

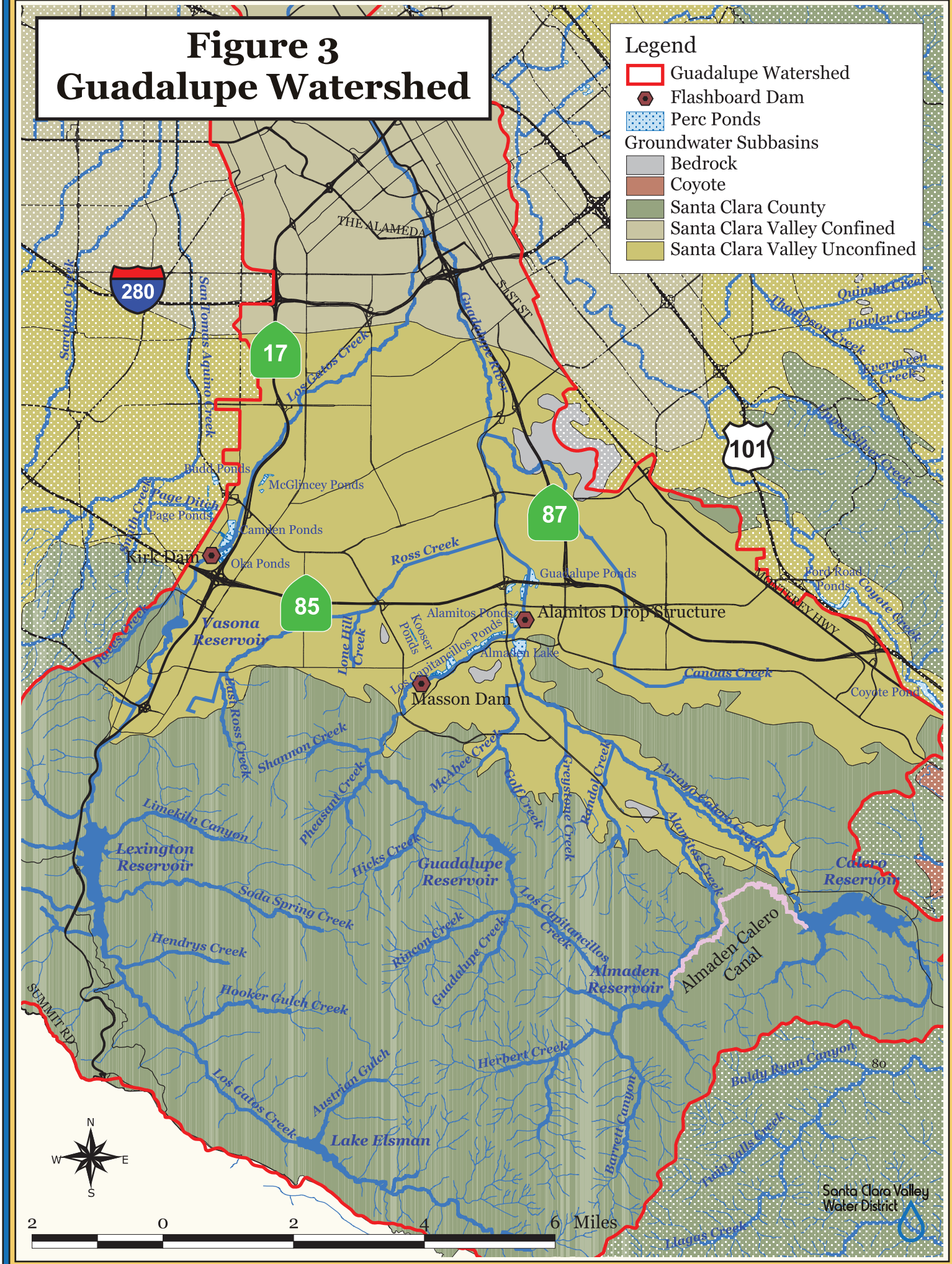
Target Ramping Factor 0.25
Flow Percent Criteria 50

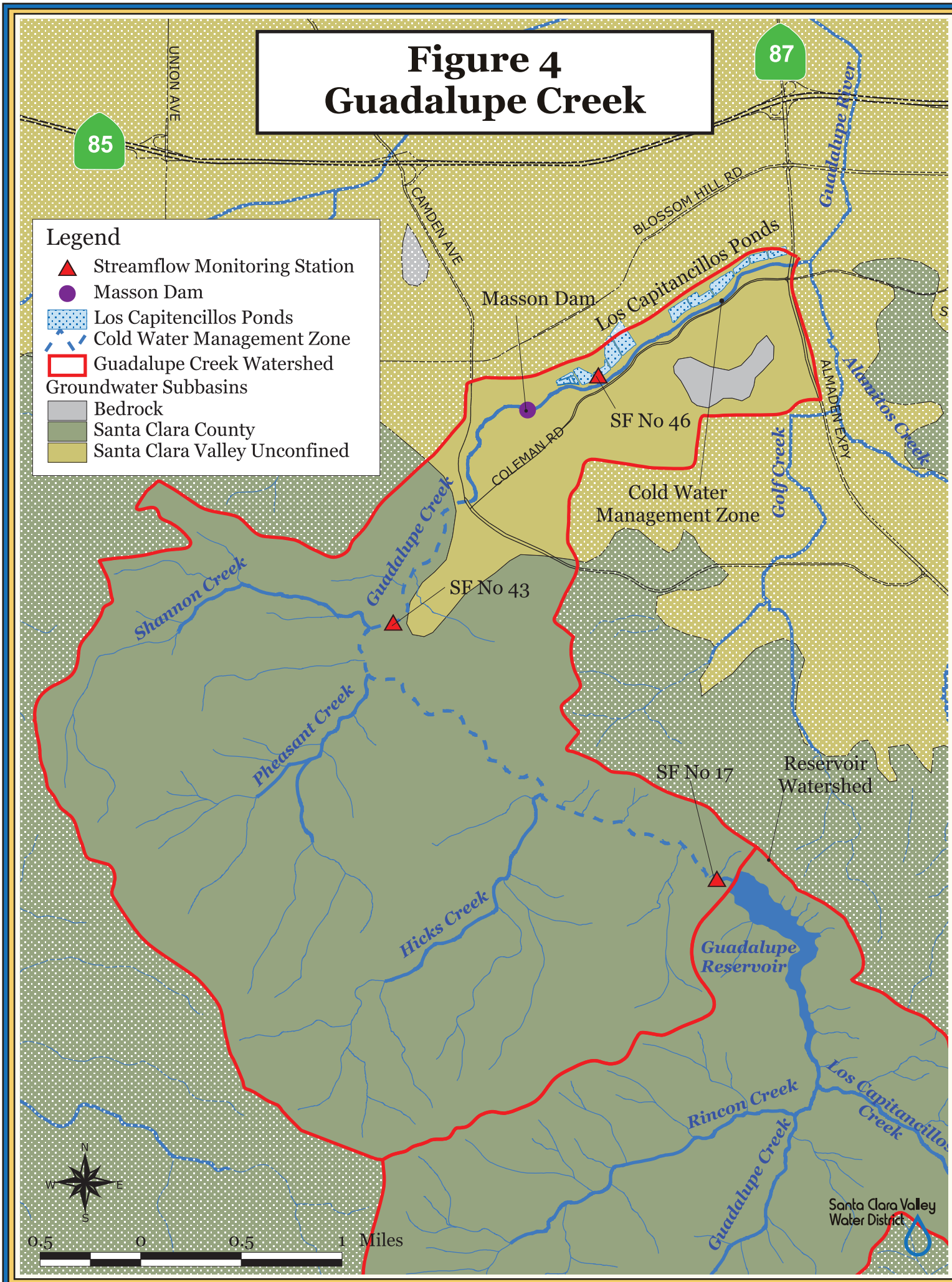
Begin	End	Change	Percent	Ramping	Calc. Increments	No. of Increments	Max Increments	No. of Increments	Act. Ramping Factor	Increments 0	1	2	3	4	5	6	7
300	250	50	17%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
300	200	100	33%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
300	100	200	67%	YES	3.8	4	7	4	0.24	300	228	173	132	100	-	-	-
300	25	275	92%	YES	8.6	9	7	7	0.30	300	210	147	103	73	51	36	25
300	10	290	97%	YES	11.8	12	7	7	0.38	300	185	114	70	43	26	16	10
100	80	20	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	60	40	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	50	50	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
100	49	51	51%	YES	2.5	3	7	3	0.21	100	79	62	49	-	-	-	-
100	20	80	80%	YES	5.6	6	7	6	0.24	100	76	58	45	34	26	20	-
50	40	10	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
50	25	25	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
50	16	34	68%	YES	1.64	2	4	2	0.43	50	28	16	-	-	-	-	-
50	10	40	80%	YES	5.6	6	4	4	0.33	50	33	22	15	10	-	-	-
50	5	45	90%	YES	8.0	9	4	4	0.44	50	28	16	9	5	-	-	-
20	15	5	25%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	12	8	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	10	10	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
20	8	12	60%	YES	3.2	4	4	4	0.20	20	16	13	10	8	-	-	-
20	6	14	70%	YES	4.2	5	4	4	0.26	20	15	11	8	6	-	-	-
20	4	16	80%	YES	5.6	6	4	4	0.33	20	13	9	6	4	-	-	-
20	2	18	90%	YES	8.0	9	4	4	0.44	20	11	6	4	2	-	-	-
10	8	2	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	7	3	30%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	6	4	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	5	5	50%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
10	4	6	60%	YES	3.2	4	4	4	0.20	10	8	6	4	-	-	-	-
5	4	1	20%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
5	3	2	40%	NO	-	-	-	-	-	-	-	-	-	-	-	-	-
5	2	3	60%	YES	3.2	4	4	4	0.20	5	2	-	-	-	-	-	-
5	1	4	80%	YES	5.6	6	4	4	0.33	5	3	1	-	-	-	-	-

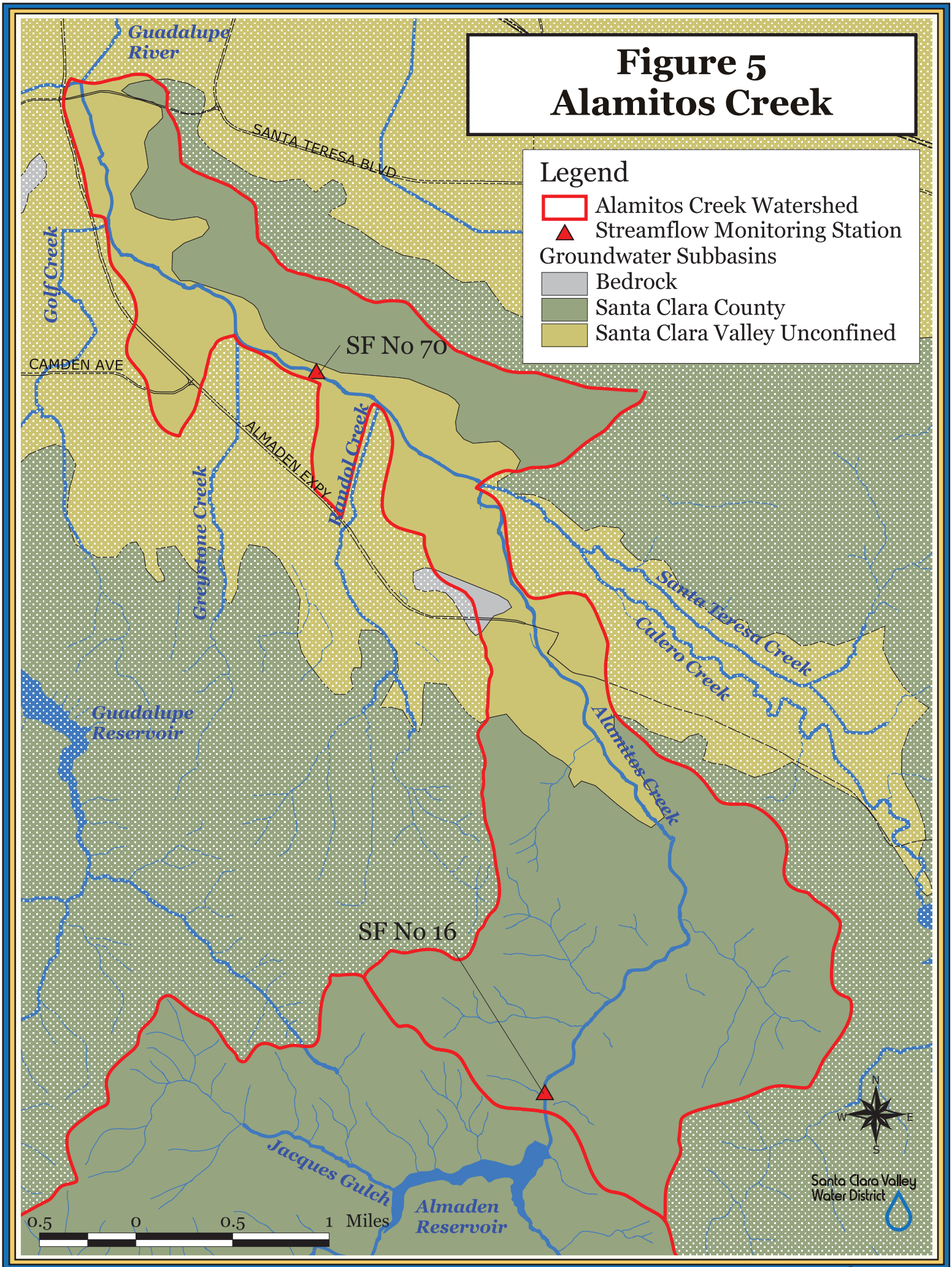
Rules:
Max of 7 increments for change in flow greater than 50 cfs otherwise a max of 4 increments
Minimum of 2 cfs change in flow b/w successive increments

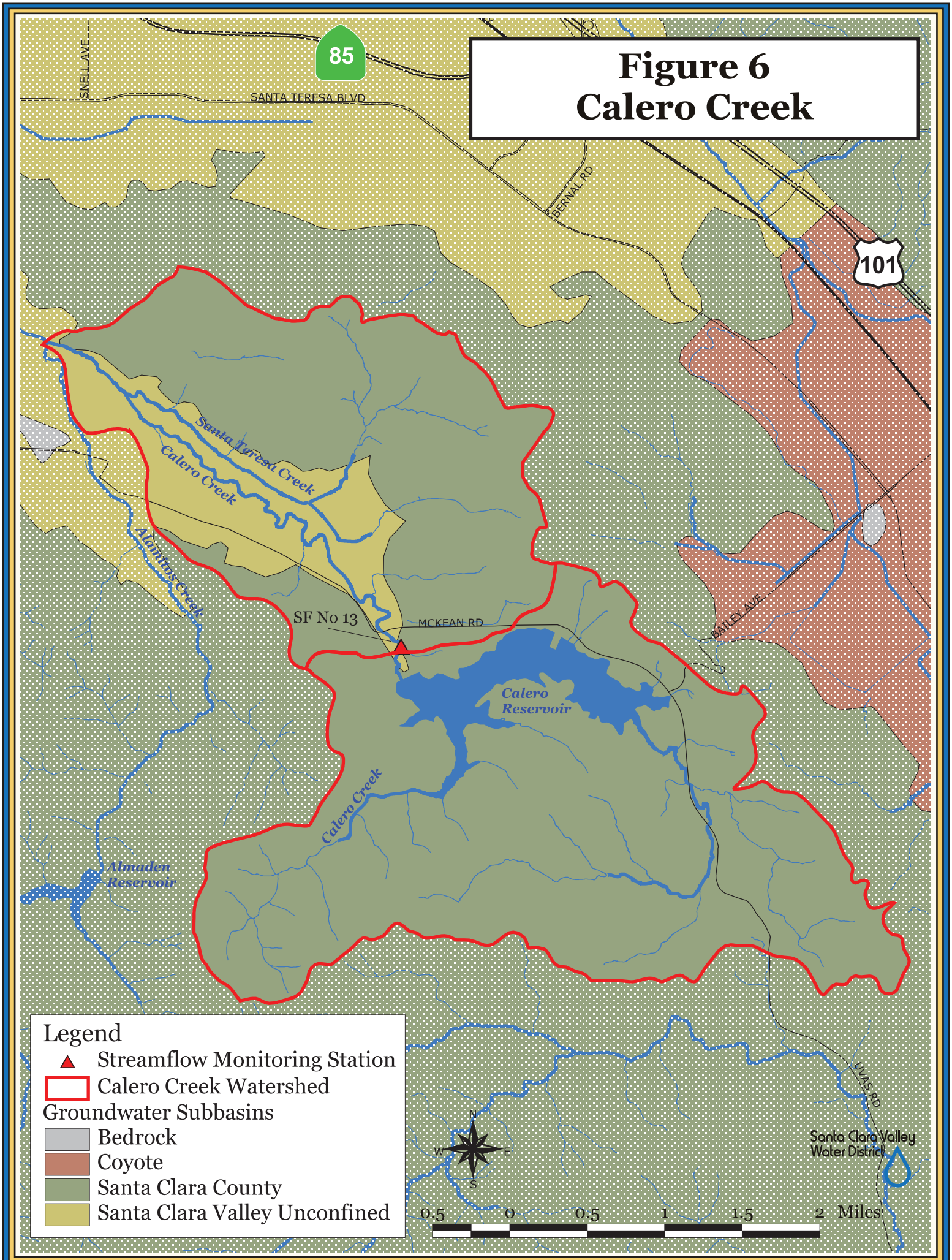

Figure 1
Coyote Creek
N
W
E
S
METCALF RD
Coyote Canal
Branch E
Branch D
Branch C
Branch B
Branch A
BAILEY AVE
Fisher Creek
Coyote Creek
Anderson Reservoir
Cold Water Management Zone
SF No 11
SF No 82
SF No 9
Cochran Channel
COCHRANE RD
101
E MAIN AVE
E DUNNE AVE
Chesbro Reservoir
Santa Clara Valley Water District
Legend
Coyote Watershed
Streamflow Monitoring Station
Coyote Canal
Cold Water Management Zone
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Llagas Unconfined
Santa Clara Valley Unconfined
0.5 0 0.5 1 1.5 2 Miles


Figure 2
Stevens Creek
0.25 0 0.25 0.5 0.75 Miles
N
W
E
S
Stevens Creek
280
Heney Creek
Cold Water Management Zone
SF No 44
85
Santa Clara Valley Water District
Montebello Creek
Swiss Creek
Stevens Creek Reservoir
Legend
Streamflow Monitoring Station
Cold Water Management Zone
Stevens Creek Watershed
Groundwater Subbasins
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined


Figure 3
Guadalupe Watershed
Legend
Guadalupe Watershed
Flashboard Dam
Perc Ponds
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined
280
17
87
101
85
THE ALAMEDA
SR 17
Guadalupe River
Los Gatos Creek
San Tomas Aquino Creek
Saratoga Creek
Budd Ponds
McGlincey Ponds
Page Ditch
Page Ponds
Camden Ponds
Kirk Dam
Oka Ponds
Ross Creek
Guadalupe Ponds
Alamitos Ponds
Alamitos Drop Structure
Vasona Reservoir
Lone Hill Creek
Kooser Ponds
Los Capitancillos Ponds
Almaden Lake
Masson Dam
Canoas Creek
Coyote Pond
Ford Road Ponds
MONTEREY HWY
Coyote Creek
Quimby Creek
Thompson Creek
Fowler Creek
Evergreen Creek
Silver Creek
Smith Creek
Davis Creek
East Ross Creek
Shannon Creek
Pheasant Creek
Limekiln Canyon
Lexington Reservoir
McAbee Creek
Golf Creek
Graystone Creek
Randol Creek
Arroyo Calero Creek
Alamitos Creek
Calero Reservoir
Hicks Creek
Guadalupe Reservoir
Soda Spring Creek
Hendrys Creek
Rincon Creek
Guadalupe Creek
Los Capitancillos Creek
Almaden Reservoir
Almaden Calero Canal
Hooker Gulch Creek
SUMMIT RD
Austrian Gulch
Herbert Creek
Los Gatos Creek
Lake Elsman
Barrett Canyon
Bolday Ranch Canyon
Trout Falls Creek
Llagas Creek
N
W
E
S
2 0 2 4 6 Miles
Santa Clara Valley Water District


Figure 4
Guadalupe Creek
Legend
Streamflow Monitoring Station
Masson Dam
Los Capitencillos Ponds
Cold Water Management Zone
Guadalupe Creek Watershed
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Unconfined
UNION AVE
85
87
CAMDEN AVE
BLOSSOM HILL RD
Guadalupe River
Masson Dam
Los Capitancillos Ponds
SF No 46
COLEMAN RD
ALMADEN EXPY
Alamitos Creek
Golf Creek
Cold Water
Management Zone
Guadalupe Creek
Shannon Creek
SF No 43
Pheasant Creek
SF No 17
Reservoir
Watershed
Hicks Creek
Guadalupe
Reservoir
Rincon Creek
Los Capitancillos
Creek
Guadalupe Creek
N
W
E
S
0.5
0
0.5
1 Miles
Santa Clara Valley
Water District


Figure 5
Alamitos Creek
Legend
Alamitos Creek Watershed
Streamflow Monitoring Station
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Unconfined
Guadalupe River
SANTA TERESA BLVD
Golf Creek
CAMDEN AVE
SF No 70
ALMADEN EXPY
Randol Creek
Greystone Creek
Santa Teresa Creek
Calero Creek
Alamitos Creek
Guadalupe Reservoir
SF No 16
Jacques Gulch
Almaden Reservoir
0.5 0 0.5 1 Miles
N
W
E
S
Santa Clara Valley Water District


Figure 6
Calero Creek
85
SNELL AVE
SANTA TERESA BLVD
BERNAL RD
101
Santa Teresa Creek
Calero Creek
Alamitos Creek
SF No 13
MCKEAN RD
BAILEY AVE
Calero Reservoir
Calero Creek
Almaden Reservoir
UVAS RD
Legend
Streamflow Monitoring Station
Calero Creek Watershed
Groundwater Subbasins
Bedrock
Coyote
Santa Clara County
Santa Clara Valley Unconfined
N
W
E
S
Santa Clara Valley Water District
0.5 0 0.5 1 1.5 2 Miles

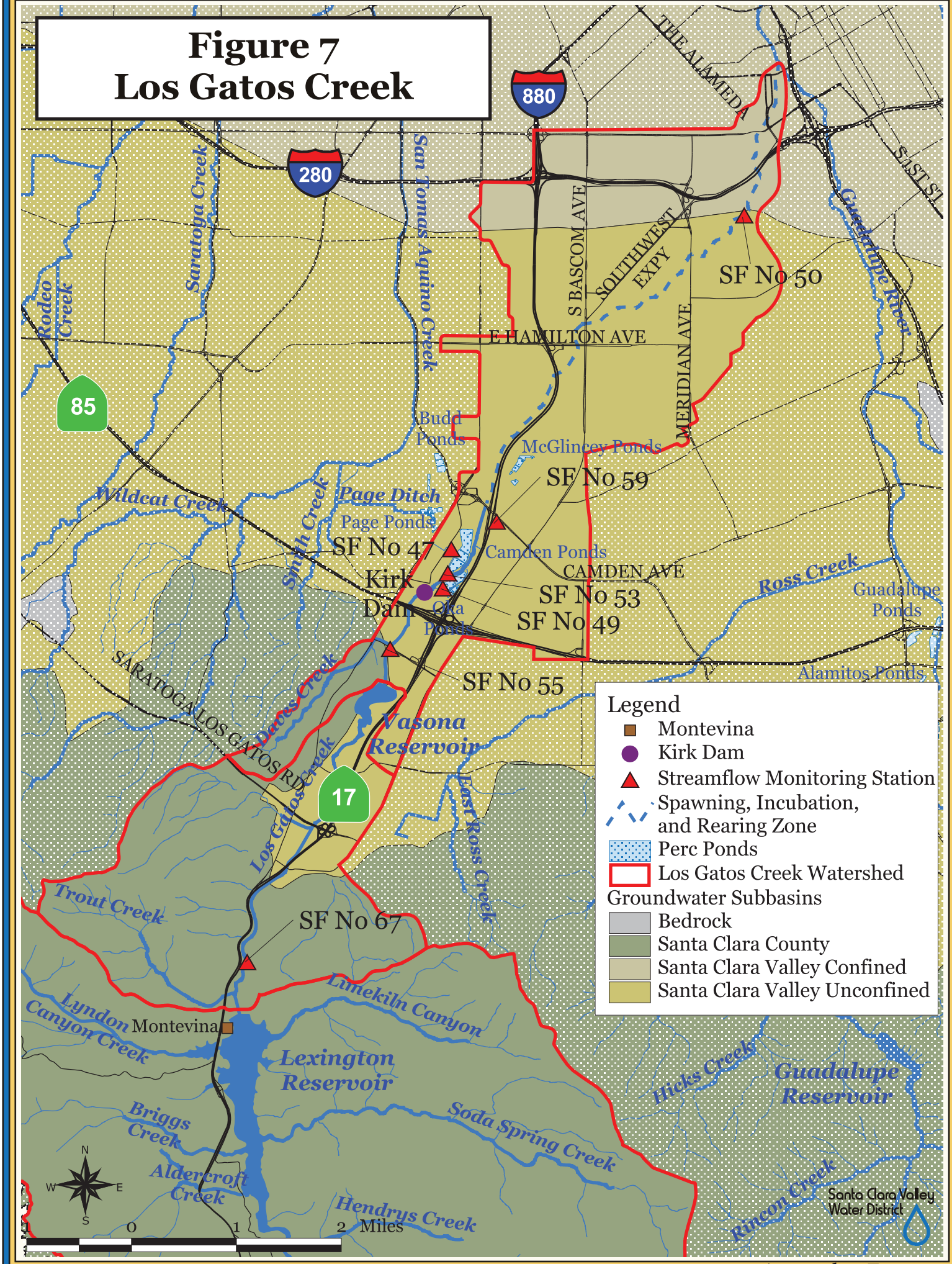

Figure 7
Los Gatos Creek
880
280
85
17
THE ALAMEDA
S 1ST ST
Guadalupe River
San Tomas Aquino Creek
Saratoga Creek
Rodeo Creek
S BASCOM AVE
SOUTHWEST EXPY
MERIDIAN AVE
E HAMILTON AVE
SF No 50
Budd Ponds
McGlincey Ponds
SF No 59
Wildcat Creek
Page Ditch
Page Ponds
Smith Creek
SF No 47
Kirk Dam
Camden Ponds
CAMDEN AVE
SF No 53
SF No 49
Ross Creek
Guadalupe Ponds
Alamitos Ponds
SF No 55
SARATOGA LOS GATOS RD
Davis Creek
Vasona Reservoir
Los Gatos Creek
East Ross Creek
Trout Creek
SF No 67
Lyndon Canyon Creek
Montevina
Lexington Reservoir
Lumekiln Canyon
Hicks Creek
Guadalupe Reservoir
Briggs Creek
Aldercroft Creek
Soda Spring Creek
Hendrys Creek
Rincon Creek
Legend
Montevina
Kirk Dam
Streamflow Monitoring Station
Spawning, Incubation, and Rearing Zone
Perc Ponds
Los Gatos Creek Watershed
Groundwater Subbasins
Bedrock
Santa Clara County
Santa Clara Valley Confined
Santa Clara Valley Unconfined
N
W
E
S
0
1
2 Miles
Santa Clara Valley Water District

FIGURE 8
STEVENS CREEK RESERVOIR OPERATION RULE CURVES
EXAMPLE

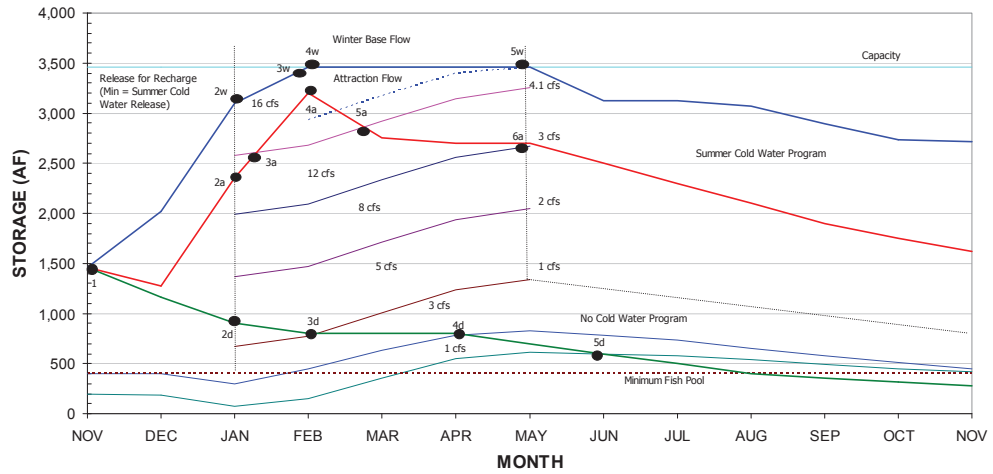
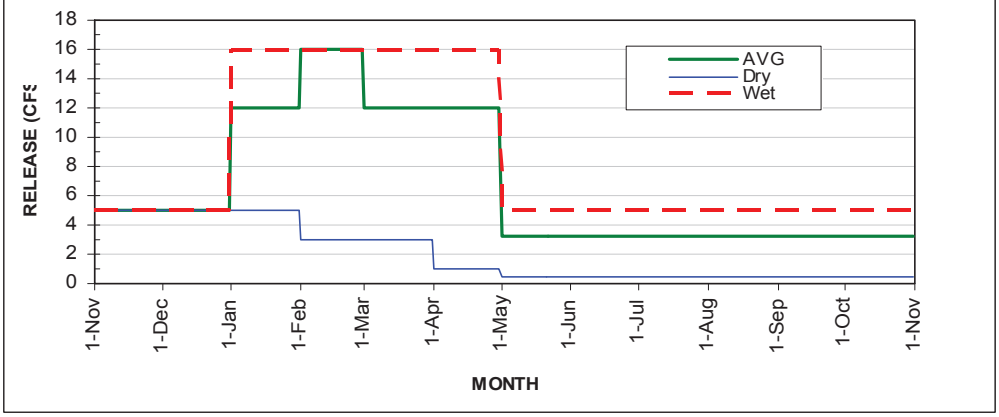


FIGURE 9
STEVENS CREEK RESERVOIR OPERATIONS EXAMPLE
RELEASES



Appendix C
Stakeholder Engagement

Appendix C1 – Environmental Scoping Report

Appendix C2 – Tribal Letters

Appendix C – Stakeholder Engagement

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Fish and Aquatic Habitat Collaborative Effort Program and Fish Habitat Restoration Plan: Environmental Scoping Report

1.1 Introduction

The purpose of scoping is to obtain information on significant issues associated with a project to guide an agency's environmental review process. As part of scoping, agencies hold public meetings to provide the public with information and to encourage participation and input in the environmental review process. The Santa Clara Valley Water District (SCVWD, or District) is preparing an environmental impact report (EIR) for the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) Program's Fish Habitat Restoration Plan (FHRP).

1.2 Background

The FAHCE Settlement Agreement (Settlement Agreement) was initialed in 2003, by the SCVWD, the Guadalupe-Coyote Resource Conservation District (GCRCD) – water rights complainants, and the regulatory agencies – California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS) to comprehensively address all issues in the 1996 water rights complaint filed by the GCRCD with the State Water Resources Control Board (SWRCB) and any related issues arising under state and federal laws that concern the impacts of the SCVWD's facilities and operations on the beneficial uses of the Three Creeks.

The District is the Lead Agency under the California Environmental Quality Act (CEQA) and will prepare an EIR for the development and implementation of a FHRP (proposed project) for north county streams with water supply reservoirs. The FHRP identifies proposed project-specific and programmatic actions to support the overall management objectives to "restore and maintain healthy steelhead trout and salmon populations as appropriate to each of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat, and for out-migration of juveniles."

1.3 Setting

The project area encompasses streams in three watersheds in northern Santa Clara County, California, where the SCVWD holds water rights licenses: Coyote Creek, Guadalupe River, and Stevens Creek. The scope of the project addresses the water supply diversions, operations, and operational features that directly affect in-stream flows in each of these stream systems–below the first upstream diversion and above the tidal zone. The streams are identified as habitat for federal Endangered Species Act-listed species, including the California Central Coast Steelhead (threatened). District operations in the three watersheds include the following:

- Coyote Creek – the District operates Anderson and Coyote Reservoirs in the upper watershed at the origin of Coyote Creek, and in-stream recharge facilities on the Coyote main stem and Upper Penitencia Creek, a tributary to Coyote Creek.
- Guadalupe River – the District operates Lexington, Guadalupe, Almaden and Calero Reservoirs on Los Gatos, Guadalupe, Alamitos, and Calero Creeks, respectively; and in-stream recharge facilities on Los Gatos Creek (Vasona, Kirk, and Camden recharge ponds); Guadalupe Creek (Masson/ Los Capitancillos ponds), Alamitos Creek (Alamitos Flashboard Dam and Alamitos/Guadalupe ponds).
- Stevens Creek – the District operates Stevens Creek Reservoir and water supply facilities in Stevens Creek.

2 Project Summary

2.1 Elements of the FAHCE Fish Habitat Restoration Plan

2.1.1 Flow Measures – Reservoir Re-operation Rule Curves (Rule Curves)

The FAHCE process proposed modifications to District reservoir operations that were specified in the settlement agreement. Reservoir release rates were identified for each reservoir to meet instream flow requirements to improve habitat conditions for salmonids. These winter base flows, pulse flows, and summer flows support life cycle requirements of anadromous fish. The FHRP proposes the application of these rule curves to District reservoir water releases to fulfill the provisions of the settlement agreement. Further, the District is proposing these operational commitments for instream flow requirements as the basis to amend its water rights licenses and address elements of the California Water Code §1707, CA Fish and Game Code §5937, and public trust doctrine issues needed to resolve the water rights complaint.

2.1.2 Habitat Improvement Measures

The FHRP also identifies programmatic actions to improve habitat conditions in the Three Creeks area. Measures include remediation of migration barriers, channel and stream restoration, facility upgrades, and enhanced operation protocols for fishways, ponds, and other facilities adjacent to steelhead streams.

2.2 Biological Monitoring/Adaptive Management

To determine compliance with the objectives of the proposed project and evaluate its effectiveness, monitoring of the flows, a biological monitoring program, and an adaptive management program are proposed. The biological monitoring program will evaluate the effectiveness of the flow measures and generate science-based information on the condition of fish habitat to provide a basis for the adaptive management program. As flow, habitat improvement, and other measures are implemented over the course of the FHRP, adaptive management will help ensure the management objectives are met and maintained.

3 Scoping Process

The District has determined that the FHRP has the potential to have a significant effect on the physical environment, and has decided to prepare an EIR. The EIR process provides opportunity for public participation in the planning and decision-making process. CEQA mandates specific times during the EIR process when public and agency comments on the environmental analysis are solicited, including the scoping period.

3.1 Purpose of Scoping

Scoping refers to the public outreach process used to determine the scope and content of an EIR, and is an important opportunity for public review and comment in the early phases of a project. Per CEQA, the scoping process for an EIR is initiated by publication of the notice of preparation (NOP), which provides formal notice to the public and interested agencies and organizations that a draft EIR is being prepared. The purpose of the NOP is to inform responsible and trustee agencies and the public that the project could have significant effects on the environment and to provide notification of the project's NOP response period, during which agencies and the public are invited to comment on the project, the approach to environmental analysis, and any issues of concern.

Detailed descriptions of the NOP and scoping meeting processes conducted for the FAHCE FHRP are provided below. The 30-day review period for the NOP initiated the CEQA process through which the District is refining the range of issues and project alternatives that are being addressed in the draft EIR. The District will consider the input received

during the scoping process during preparation of the Draft EIR. Once the draft EIR is completed, it will be made available for a 60-day public review and comment period. Copies of the draft EIR will be sent directly to those agencies commenting on the NOP, and will also be made available to the public at a number of locations, including the District headquarters and public libraries in the area. Information about the availability of the draft EIR will also be posted on the District's website: http://www.valleywater.org/FAHCE.

3.2 Notice Of Preparation

As required by CEQA Guidelines (CCR §15082), the District prepared an NOP in January 2015. The NOP described the proposed project goals and objectives, potential environmental impacts, and the resulting need for a draft EIR. The NOP specified the process that will be used to determine the scope of draft EIR analysis and provided an overview of the opportunities for participation in review of the draft EIR.

The NOP was posted for public review in February 2015. A copy of the NOP is included in Appendix A. The NOP (State Clearinghouse No. 2015022008) is also on file at the Office of Planning and Research, and the District's website: http://www.valleywater.org/FAHCE. The NOP specified where and how comments should be submitted, and directed commenters to send questions about the project and the EIR to the District by mail, email, or phone. The NOP also contained information about the scoping meeting, which was to be announced separately.

During the 30-day review period for the NOP in 2015, the District received six comment letters. Comment letters received on the NOP are included in Appendix A. Comments received on the NOP included the key issues outlined below, which will be considered during the evaluation of the project and incorporated into the draft EIR.

3.2.1 General Comments

- Describe how Rule Curves work and model their effects.
- Describe how the proposed changes are related to water rights.
- Clarify the geographic area covered by the program.

3.2.2 Comments on Agency Coordination

- Guidelines for consultation and permit application processes with affected jurisdictions, including County Park-operated lands.

3.2.3 Comments on Impact Analysis

- Suggested baseline for environmental review.
- Clarify the process that will be followed to analyze future site-specific projects that will fulfill the program objectives.
- Provide explanation of historical fisheries data collected.
- Describe the historical and current status of fisheries, special-status aquatic and terrestrial species and habitats.
- Suggested detail for habitat improvement measures, biological monitoring, adaptive management and mitigation measures to be incorporated.
- Describe the regulatory approach and requisite permits, including habitat conservation planning.
- Suggested alternatives to be analyzed.

3.3 Scoping Meeting

To provide an opportunity for additional public input on the scope and content to be addressed in the EIR, the District scheduled a scoping meeting. In advance of the scoping meeting, a mailing list was prepared to ensure that interested members of agencies and the public remained informed of project actions and events regarding the EIR process. The mailing list is included in Appendix B.

The scoping meeting was held on Monday, June 19, 2017 from 4:00 p.m. to 6:00 p.m. The meeting location was the SCVWD Board Room at 5700 Almaden Expressway, in San Jose. The notice for the public scoping meeting is shown below and included in Appendix B.

> ***The scoping meeting will be held from 4:00-6:00 p.m, and the public can attend at any time between those hours. Information on the project description and features of the project will be posted at focused working tables and project team members will be available to accept written comments from the community. During and following the meeting, scoping comments from the public will be accepted in writing through Friday, June 30 at 5:00 p.m. Comment cards and project contact information will be made available at the meeting and on the District website.***

During the scoping meeting, presentation boards were displayed. Presentation materials are provided in Appendix C. Throughout the scoping meeting, discussions with meeting attendees were documented. Key discussions documented during the meeting are included in Appendix C.

3.4 Respondents and Comments

Based on review of meeting attendance records, a total of 19 interested parties were in attendance at the scoping meeting. Meeting sign-in sheets are provided in Appendix D. During and following the scoping meeting, written comments were received via email and comment forms that were provided at the scoping meeting. A total of 17 written comments were received, which included 5 comment letters, 5 emails, and 7 scoping meeting comment forms. Copies of the 17 written comments received are provided in Appendix E. Comments received during the scoping comment period and at the scoping meeting included the following key issues to consider during the evaluation of the project and incorporate into the draft EIR:

3.4.1 General Comments

- Request for additional creeks in the watershed to be included with the project.
- Suggested areas to include in habitat restoration.
- Suggested inclusion of step pools or fish ladders; project features that manage stream flow rates.

3.4.2 Comments on Agency Coordination

- Request for feedback on scoping meeting materials and documentation to be included on the project website.
- Request for regular progress to be communicated to stakeholders and the public in regard to returning wildlfe to creeks.
- Guidelines for consultation and permit application processes with affected jurisdictions, including County Park-operated lands

3.4.3 Comments on the Project Description

- Request for clarification of project scheduling, including how the project phases are related.

3.4.4 Comments on Impact Analyses

- Suggested levels of analysis to be included in the EIR in regard to achieving suitable habitat conditions
- Request for clarification of turbidity goals downstream of dams
- Inquiry regarding the effect of groundwater management on stream flows.
- Request for detail on plans for non-native plant species removal and/or reduction.
- Suggested consideration of water source and water quality effects, including taste and smell, on anadromous fish.
- Request for analysis of potential flood hazards and drought conditions.
- Request for consideration of the extent and health of riparian corridor's natural shaded gravel and riffle habitat and deep pool refugia.
- Describe the planning considerations for the differing ecology and requirements of Chinook vs. steelhead salmon.
- Request for consideration of dam life expectancy, including the need to remove, redistribute, or replace dams.
- Request for EIR to evaluate temperature conditions resulting from the project.
- Request for EIR to include detailed descriptions of future measures to support findings of insignificant impact.
- Suggested alternatives to be analyzed.
- Suggested mitigation measures to be incorporated.
- Suggested projects to be considered in the cumulative analysis.
- Suggested baseline for environmental review.

Appendix A – NOP and Comments

Date	Comment Letter Received
March 2, 2015	Sierra Club Loma Prieta Chapter
March 2, 2015	National Marine Fisheries Service
March 3, 2015	State of California, Department of Fish and Wildlife
March 5, 2015	County of Santa Clara, Parks and Recreation Department
March 12, 2015	National Marine Fisheries Service
March 16, 2015	Water and Power Law Group PC

Sierra Club Loma Prieta Chapter

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Notice of Preparation of a Draft Environmental Impact Report, Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Sierra Club Loma Prieta Chapter Comments

March 2, 2015

Overall Environmental Impact Report (EIR) Comments

1. An Environmental Impact Statement (EIS) is required for "major Federal actions significantly affecting the quality of the human environment." The program must consider the possibility of incidental take from its proposed revision of water operations. For this reason a joint EIR-EIS should be prepared for the FAHCE Program, and full cooperation and joint planning processes with National Marine Fisheries Service must be established.

   Under CEQA, responsible agencies are "all public agencies other than the lead agency which have discretionary approval power over the project," and participate in the CEQA process through required consultation with the lead agency. (14 CCR §§ 15096, 15381)

   Also the federal White House Council on Environmental Quality (40 CFR § 1506.2) encourage cooperation with state and local agencies in an effort to reduce duplication in the NEPA process. The regulation states that cooperation shall include:
   a. Joint planning processes.
   b. Joint environmental research and studies.
   c. Joint public hearings (except where otherwise provided by statute).
   d. Joint environmental assessments.

2. This appears to be a program EIR so individual projects will need additional environmental clearance. Please clarify this and explain further clearance needed in the EIR so that the District and other agencies understand that subsequent EIR's and documents will be tiered off the Program EIR.

3. We suggest the baseline for environmental review of impacts and development of mitigation should be current SCVWD operations and physical conditions at the time of NOP release.

4. We suggest that the District utilize the Draft or Final Recovery Plan for the North Central California Coast Recovery Domain as published by the National Marine Fisheries Service as the baseline for impacts to Steelhead within this EIR.

5. Explain within the EIR fisheries data collected over the last 20 years and what kind of comprehensive data the District did or did not collect.

Program Description

6. Include discussion that describes the threatened status of steelhead. Because of the declines in steelhead the federal government with the California Department of Fish and Wildlife concurred on the listing of coastal steelhead populations south of the Russian River under the Endangered Species Act as threatened species.

7. The Three Creeks Habitat Conservation Plan (HCP) developed by the District in 2014 was inconsistent with the FAHCE Settlement Agreement and cannot serve as the "project" for the purposes of the FAHCE EIR.

8. Include a description of the water rights proposed changes the District will be applying for as described in original FAHCE documents. Describe all existing water rights involved in the project on all three watersheds and existing permits utilized (State Water Board and SF Regional Water Quality Control Board), and any permits that would describe transport of imported water from San Luis Reservoir via pipeline and then diverting this water into Coyote Creek instead of using the historic Coyote Canal.

9. The project boundaries are bigger than the three watersheds. Describe the federal components of the water system which brings federal and state water through the Bureau of Reclamation facilities as leased by the District (San Luis Reservoir down to Coyote pump station) and the federal nexus to the project which then spills water via this federal conveyance system into the Coyote and other District Watersheds related to this Program.

Program Description – Flow Measures

10. We request development of a robust collaborative water flow modeling system with a multiyear data collection of fisheries per protocols accepted within the fisheries community to adequately analyze biological resources in relation to geology, hydrology, geomorphology, fisheries, and other environmental factors. This prudent investment would assist with environmental review and future permitting of FAHCE projects and should have been completed by now.

11. Please provide an easily understandable description of Reservoir Re-Operation Rule Curves with full documentation and mathematics (appendix) of the proposed rule curves and computer models utilized. Please describe any lack of data and the reliability of such models and outcomes. We understand these rule curves are mostly hypothetical with little testing behind them. We expect substantial documentation with repeatable results by District scientists and other fisheries biologists and water professionals.

Program Description – Habitat Improvement Measures

12. The description of habitat improvement measures must include a list of migration barrier removal projects. It is feasible to identify all of these projects even if it is not feasible to do full environmental review of each project. This list should include all the projects in the FAHCE Settlement Agreement including the Metcalf Ponds Stream Corridor Restoration as well as priority habitat and passage improvement projects identified since 2003, such as replacing the SCVWD water diversion dam located 2000 feet downstream from Almaden Lake with step pools (and necessary channel improvements in this section), addressing the temperature issues that limit habitat suitability on lower Los Gatos Creek, and providing passage through the concrete apron on lower Stevens Creek.

13. The description should include a list of habitat measures completed prior to the (pre-NOP) CEQA baseline of this project, and a list of measures proposed with this Program.

14. Include Guidelines for Bank Stabilization as part of the program to be reviewed, as required in the FAHCE Settlement Agreement.

15. Water quality must be included in the habitat improvement measures needed to provide conditions for viable aquatic habitats. Issues with trash, hazardous waste, homeless persons, and urban runoff pollution must be addressed by the program and impacts analyzed and mitigations established.

Program Description – Biological Monitoring / Adaptive Management

16. Include a detailed description of activities outlined in the FAHCE Settlement Agreement including the requirement to add "range expansion" (trap and truck measures) in Phase II if the Phase I measures do not achieve the desired improvements in fish population.

Topics to be Analyzed – Biological Resources

17. Analyze impacts of flow and habitat improvement measures on other aquatic species, specifically the Western Pond Turtle and the Red-Legged Frog.

Topics to be Analyzed – Cumulative Impacts

18. Include all projects in any stage of feasibility or planning, including all flood control and bay levee improvement projects, as well as other water infrastructure and flow changes related to imported water.

Mitigation

1. Minimize the scouring impacts due to district operation of pipelines, percolation ponds and dam outlets with lack of flow metering capabilities. Describe what measures are being constructed currently in the Anderson Dam to counter this problem as well as all other dams being seismically retrofitted in the near future.

2. Describe how the District will control exotic species in the waterway, especially with any introduction due to imported water.

3. Please differentiate those measures that will not count towards mitigating this project (e.g. Funding of fish ladders already required under existing law for existing facilities, or any other general funding mechanism or program that is already funded and a part of another district program or project). Don't double count mitigation or programs that already exist relative to another District program, project or function.

4. Special Construction Techniques (BMP's). SFPUC and other districts and agencies around the State of California recognize that BMP's are not mitigation measures, but special construction techniques primarily used in storm-water and erosion control, water quality, etc. The Lotus V. Caltrans case made this clear. Also we understand that the District has never formally adopted any BMP's so it would they have no legal parlance at the District in terms of CEQA. We recognized BMP's originate more out of the federal process and clean water act and would expect to see them in construction specifications for fish barrier removals, and not in the EIR.

Alternatives

5. Include an alternative that analyzes fish ladders or equivalent fish passage measures for all dams including large Dams like Anderson and small dams such as the Vasona and Almaden lake dams.

6. Please think outside the box to come up with real project alternatives beyond meaningless paper alternatives by working with community stakeholders and the National Marine Fisheries Service. The Sierra Club expects extensive outreach to the stakeholders to develop this EIR.

Sierra Club Loma Prieta Chapter

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March 2, 2015

Tiffany Hernandez, Environmental Planner
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

RE: Notice of Preparation of a Draft Environmental Impact Report, Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Dear Ms. Hernandez,

The Sierra Club Loma Prieta Chapter (SCLP) has many comments and concerns about the Notice of Preparation (NOP) and the Project to implement FAHCE Settlement Agreement. Most immediately, we request that the Santa Clara Valley Water District (District) extend the NOP comment period for 30 days beyond the March 2. 2015 deadline. SCLP has not had sufficient time to develop our comments. However, in case the comment period is not extended, our initial comments are attached.

Apparently key stakeholders in the fisheries community did not receive any notice. Please contact key stakeholders via email and mail to NOAA Fisheries in Santa Rosa, US Fish and Wildlife, other state and federal agencies, and all local non-profits and individuals. SCLP highly recommends the reestablishment of an active working group of stakeholders (state and federal and not for profit organizations and individuals) to meet monthly with the District FAHCE team to help drive this project in the right direction.

In addition SCLP believes there is no reason to delay planning and design for the necessary projects to restore adequate passage for Steelhead. We suggest this work be done in parallel with the FAHCE Fish Habitat Restoration Plan Environmental Impact Report.

The Sierra Club appreciates the opportunity to comment on this Project and urges District staff and the Board of Directors to fully consider the points we have raised.

Respectfully Submitted,



Katja Irvin, AICP
Chair, Water Committee
Sierra Club Loma Prieta Chapter

Enclosures: 1

Cc: Gary Stern, National Marine Fisheries Service
Richard McMurtry, Environmentalists for Living Streams
Tami Schane, California Department of Fish and Wildlife
Mike Ferreira, Sierra Club Loma Prieta Chapter

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

March 2, 2015

Tiffany Hernandez
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, California 95118

Re: Request for a time extension to comment on Notice of Preparation (NOP) of a Draft Environmental Impact Report for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Dear Ms. Hernandez:

On February 26, 2015, NOAA's National Marine Fisheries Service was informed that the Santa Clara Valley Water District (District) had published the Notice of Preparation (NOP) of a Draft Environmental Impact Report for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan. As a result of this late notice, NMFS will not have adequate time to review the NOP by today's deadline, and we request an extension until March 6, 2015 to submit our comments to the District.

NMFS has been involved in the FAHCE Program since its inception in 1997, and NMFS initialed the FAHCE Settlement Agreement in 2003. Our two agencies have also worked together over the past 11 years to develop a habitat conservation plan (HCP) pursuant to Section 10(a)(1)(B) of the Endangered Species Act which includes the FAHCE fisheries restoration actions and the future operation of District facilities in Stevens Creek, Guadalupe River, and Coyote Creek watersheds. An extension of the comment period would allow NMFS to review the NOP and assess the relationship of this program to our work with the District on the HCP.

Thank you for your consideration of this request. Please contact Gary Stern of my staff at 707-575-6060 or gary.stern@noaa.gov if you have questions regarding these comments.

Sincerely,

for Gary Stern

Irma Lagomarsino
Assistant Regional Administrator
California Coastal Office

cc: Debra Caldon, SCVWD
Brenda Blinn, CDFW

State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

March 3, 2015

Ms. Tiffany Hernandez
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
thernandez@valleywater.org

Dear Ms. Hernandez:

Subject: Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan, Notice of Preparation of a Draft Environmental Impact Report, SCH #2015022008, Santa Clara County

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan (Project) draft Environmental Impact Report (EIR). The document was received in our office on February 3, 2015.

CDFW is a Trustee Agency pursuant to the California Environmental Quality Act (CEQA) Section 15386 with responsibility under CEQA for commenting on projects that could affect biological resources. As trustee for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection, and management of the fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species for the benefit and use by the people of California. CDFW also acts as a Responsible Agency pursuant to CEQA Section 15381 if a project requires discretionary approval, such as issuance of a California Endangered Species Act (CESA) Permit (Fish and Game Code Section 2080 et seq.), or Lake or Streambed Alteration Agreement (LSAA) (Fish and Game Code Section 1600 et seq.). CDFW is submitting comments on the NOP as a means to inform the Santa Clara Valley Water District (SCVWD) of our concerns regarding sensitive resources which could potentially be affected by the Project and which should be addressed in the upcoming EIR.

Project Description

The proposed Project study area is located within the Coyote Creek, Guadalupe River and Stevens Creek watersheds in northern Santa Clara County. Within the Coyote Creek watershed, the Project includes operation of Coyote and Anderson reservoirs at the origin of Coyote Creek, and the instream recharge facilities in the Coyote Creek mainstem and Upper Penitencia Creek, which is a tributary to Coyote Creek. Within the Guadalupe River watershed, the Project includes operation of Lexington, Guadalupe, Almaden and Calero reservoirs on Los Gatos Creek, Guadalupe Creek, Alamitos Creek,and Calero Creek, respectively, and the associated instream recharge facilities on Los Gatos Creek, Guadalupe Creek and Alamitos Creek. Within the Stevens Creek watershed, the Project includes operation of Stevens Creek Reservoir and water supply facilities in Stevens Creek.

The purpose of the proposed Project is to implement the FAHCE Settlement Agreement, which was initiated in 2003 by SCVWD, the Guadalupe-Coyote Resource Conservation District (GCRCD), CDFW, U.S. Fish and Wildlife Service, and National Marine Fisheries Service to address a 1996 water rights complaint filed by GCRCD with the State Water Resources Control Board. The NOP states that the operational commitments for instream flow requirements described in the FAHCE Settlement Agreement will be the basis for amending the District's water rights licenses for the subject reservoirs as part of the process for resolving the water rights complaint filed by GCRCD.

The FAHCE Fish Habitat Restoration Plan identifies specific actions needed to support the overall management objectives to restore and maintain healthy populations of the federally threatened Central California Coast steelhead (*Oncorhynchus* mykiss) trout and the state species of special concern Central Valley fall-run/late fall-run Chinook salmon (*O. tshawytscha*) by providing suitable spawning and rearing habitat within each watershed and providing adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles. Elements of the FAHCE Fish Habitat Restoration Plan include modifications to SCVWD reservoir operations (Reservoir Re-operation Rule Curves) that include winter base flows, pulse flows, and summer flows; habitat improvements (to be further evaluated in subsequent CEQA documents and tiered to the upcoming EIR) such as removal of migration barriers, channel and stream restoration, facilities upgrades (i.e., screening of diversions), and enhanced operation and maintenance protocols for fish ways, ponds, and other facilities adjacent to steelhead streams; biological monitoring to determine compliance and effectiveness of FAHCE Program objectives; and adaptive management.

Biological Resources

The NOP states that the scope of the FAHCE Program addresses water supply diversions, operations, and operation features that directly affect instream flows in each of the three watersheds, below the first upstream diversion (i.e., the reservoirs) and above the tidal zone. CDFW recommends that the EIR specifically identify and describe the nature and quality of existing instream habitats (riparian, wetland, and presence or lack of instream complexity such as riffles, pools, boulders, and large woody debris) for each of the three watersheds, including whether or not the Project is anticipated to have environmental effects to stream resources located within the brackish and tidal zones of each watershed.

CDFW recommends that the EIR identify and describe any direct or indirect effects of the Project to aquatic or semi-aquatic special-status species, including the federal candidate and state threatened longfin smelt (*Spirinchus thaleichthys*); the federally threatened green sturgeon (*Acipenser medirostris*); the federal and state threatened California tiger salamander (*Ambystoma californiense*); the federally threatened and state species of special concern California red-legged frog (*Rana draytonii*); and state species of special concern western pond turtle (*Emys marmorata*).

CDFW recommends that the EIR also identify and describe any direct or indirect effects of the Project to upland/terrestrial habitats and associated special-status plant and wildlife species. In addition to analyzing the potential effects of modifications to stream flows to upland/terrestrial habitats and associated species, CDFW recommends that the EIR discuss the effects of habitat improvement activities or modifications to operations and maintenance to resources outside of

the stream channel related to habitat modification, grading, stockpiling, equipment access, and staging. Effects related to these types of activities should be described in the EIR to the degree possible, and if necessary, acknowledging the fact that these types of activities may need to be further addressed in subsequent CEQA documents.

Please be advised that any activities that may result in take of a state-listed species are subject to Section 2081 of the Fish and Game Code. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". Therefore, CDFW recommends that the EIR be revised to state that the Project proponent will consult with CDFW and submit an application for a 2081(b) Incidental Take Permit for activities that may result in take of any CESA-listed species.

CDFW appreciates the opportunity to comment on the SCVWD's NOP for the FAHCE Program and Fish Habitat Restoration Plan. CDFW staff is available to meet with you to further clarify our comments and provide technical assistance on water rights issues, as well as development of the fish habitat restoration plan, monitoring program, and adaptive management program. If you have any questions, please contact Ms. Tami Schane, Environmental Scientist, at (415) 831-4640 or tami.schane@wildlife.ca.gov; or Ms. Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 944-5541 or brenda.blinn@wildlife.ca.gov.

Sincerely,

Scott Wilson

Scott Wilson
Regional Manager
Bay Delta Region

cc: State Clearinghouse

Ms. Susan Glendening
San Francisco Regional Water Quality Control Board
SGlendening@waterboards.ca.gov

Mr. Gary Stern
NOAA Fisheries
gary.stern@noaa.gov

County of Santa Clara

Parks and Recreation Department

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March 5, 2015

Ms. Tiffany Hernandez
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Re: Notice of Preparation for the FAHCE – Draft EIR

Dear Ms. Hernandez,

The County of Santa Clara Parks Department (Parks Department) has received a copy of the Notice of Preparation (NOP) for the above referenced project, located within the Guadalupe River, Stevens Creek, and Coyote Creek watersheds of Santa Clara County. We thank you for the opportunity to respond to this NOP and request that our agency continues to receive timely information on the development and publication of the FAHCE Draft EIR.

Need to Coordinate Implementation of the FAHCE with the County of Santa Clara

The County of Santa Clara is supportive of efforts to improve stream habitat for endangered salmonid species in the County. But please note that while a number of enhancements identified occur on lands owned by the County and operated by the Parks Department, the County of Santa Clara is not a signatory to the Settlement Agreement for this effort. The Draft EIR for the FAHCE must recognize that the adopted Mission and Vision Statement for the Parks Department clearly denotes the need to provide a balance between natural resource protection and recreational opportunities. Any enhancement efforts that either directly or indirectly impact lands or facilities of Santa Clara County must be identified in the Draft EIR. The Draft EIR must identify that implementation of any enhancements will require the informed cooperation of various County agencies, demonstrate compatibility with the County's mission to its citizens, and require final approval by the County Board of Supervisors prior to initiation.

Need to Assess Potential Impacts to County Lands and Facilities on Coyote Creek, Stevens Creek, and Guadalupe River Watersheds

The efforts of the FAHCE negotiations have produced a multi-year, phased approach to improve stream habitat for endangered salmonid species called the Fish Habitat Management Plan. The proposed Fish Habitat Management Plan includes modification of in-stream flow regimes, modification of in-stream ponds, removal of in-stream structures that are barriers to fish passage, reduction of summer water temperatures, in-stream and upland vegetative enhancements, and

improvements to bank and gravel bed conditions throughout the identified watersheds. The Fish Management Plan in the Settlement Agreement indicates that a number of these projects occur in areas designated as public parkland and open space, with recreational facilities and trails currently in operation or at a significant stage of planning or adopted Master Plans. The Draft EIR must:

1. Provide detailed information on each type of enhancements identified, including specific location of each enhancement, intent of specific actions, phasing of implementation, and proposed construction techniques for each phase.
2. Consider the potential significant impact that proposed enhancements would have on the operation of existing or planned future public recreational facilities at or near the location of implementations and suggest appropriate avoidance or mitigation for these impacts to public services.
3. Consider the potential impact of proposed implementation to public access and trails to existing or planned future recreational facilities located at or near the location of implementations.
4. Consider the potential impacts of proposed implementation on other sensitive species, including migratory species, dependent on the current regime or those that will be impacted by both temporary and permanent loss of existing habitats found in shallow open waters, retention/ground water recharge ponds, and adjacent uplands.
5. Consider impacts to ground water levels as a result of modification of flow regimes and removal of in-stream barrier structures.
6. Consider the long-term impacts of the enhancements to the water supply and conveyance at Coyote Creek Park Chain, Anderson, Stevens Creek and Lexington Reservoirs.
7. Consider the need to provide setbacks and permanent buffers to allow for protection and long-term viability of enhancements, including dynamic stream processes seasonal meander zones, and floodwater storage, especially in areas vulnerable to encroachment from recreation, urbanization and development.
8. Identify cooperative agreements with key agencies/jurisdictions that are necessary for the implementation of adaptive management and monitoring of the enhancements identified in the Fish Management Plan.

Need to Coordinate with County Parks Projects

The Draft EIR shall be consistent with the Parks Department's I*ntegrated Master Plan and Natural Resources Management Plan for Coyote Creek Parkway County Park.* A copy of the Program Document is available for review at the Parks Department's website: www.parkhere.org.

We appreciate the opportunity to review the NOP for the FAHCE Draft EIR and look forward to receiving a copy of the Draft EIR for review.

Sincerely,

Kimberly Brosseau, AICP
Acting Senior Planner

cc:
Don Rocha, Natural Resource Program Manager II

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

March 12, 2015

Tiffany Hernandez
Environmental Planner
Santa Clara Valley Water District
5700 Almaden Expressway
San Jose, California 95118

Dear Ms. Hernandez:

Thank you for the opportunity to review and comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan. NOAA's National Marine Fisheries Service (NMFS) commends the Santa Clara Valley Water District (District) for pursuing the fisheries restoration efforts specified in the FAHCE Settlement Agreement and we strongly support the project's overall managernent objectives to "restore and maintain healthy steelhead trout and salmon populations".

NMFS has been involved in the FAHCE since its inception in 1997 and initialed the FAHCE Settlement Agreement in 2003. Our two agencies have also worked together over the past 11 years to develop a habitat conservation plan (HCP) pursuant to Section 10(a)(1)(B) of the Endangered Species Act which includes the FAHCE fisheries restoration actions and the future operation of District facilities in Stevens Creek, Guadalupe River, and Coyote Creek watersheds. Additionally, NMFS is a Trustee Agency pursuant to Section 15386 of the California Environmental Quality Act (CEQA) with jurisdiction by law over federally-threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*).

As the District prepares the draft EIR for the FAHCE Program, NMFS recommends we continue our work on the Three Creeks HCP to ensure the two programs are well coordinated and compatible. In particular, it is important that elements of the FAHCE Program support and do not constrain development of the Three Creeks HCP's conservation strategy and measures for threatened CCC steelhead. Regular and frequent coordination with NMFS during development of the FAHCE Program EIR will facilitate this.

Concurrent with the District's preparation of the FAHCE Program draft EIR in 2015, the District continues to prepare a draft EIR for the Anderson Dam Seismic Retrofit Project.[1] Similar to the Three Creeks HCP and the FAHCE Program, the contemporaneous development of these two projects and their respective CEQA environmental reviews require attention to consistency. Of

[1] Notice of Preparation of a Draft Environmental Impact Report for the Anderson Dam Seismic Retrofit Project was issued in August 2013.

particular importance is the stream flow regime below Anderson Dam and the future management of Coyote Creek for threatened steelhead. The NOP for the Anderson Dam Seismic Retrofit Project indicates that post-construction no operational changes to water released from Anderson Reservoir will occur from existing conditions. However, adoption of the FAHCE Reservoir Re-operation Rule Curves will likely occur prior to completion of the Anderson Dam Seismic Retrofit Project in 2020.[2] If the FAHCE Program adopts a new reservoir rule curve for Anderson Dam, potentially significant changes to water released from the reservoir to Coyote Creek would be required post-seismic retrofit. NMFS recommends the two projects be well coordinated to ensure the projects and their respective public draft EIRs are consistent.

We look forward to continuing our work with the District on the Three Creeks HCP and initiating coordination with the District on the FAHCE Program draft EIR. Please contact Tancy Moore of my staff at 707-578-8553 or tancy.moore@noaa.gov if you have questions regarding these comments.

Sincerely,

FOR

Alecia Van Atta
Acting Assistant Regional Administrator
California Coastal Office

cc: Debra Caldon, SCVWD
Kurt Lueneburger, SCVWD
Brenda Blinn, CDFW
Copy to Chron file

[2] Santa Clara Valley Water District website for Anderson Dam and Reservoir indicates construction is scheduled to begin in 2017 and will extend for 3 years; http://www.valleywater.org/services/andersondamandreservoir.aspx

WATER AND POWER
LAW GROUP PC
2140 SHATTUCK AVENUE, STE. 801
BERKELEY, CA 94704-1229
(510) 296-5588
(866) 407-8073 (E-FAX)

March 16, 2015

Via electronic mail

Tiffany Hernandez
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
thernandez@valleywater.org

Re: Notice of Preparation of a Draft Environmental Impact Report for the Fish and Aquatic Habitat Collaborative Effort Program and Fish Habitat Restoration Plan

Dear Ms. Hernandez:

American Rivers, California Trout, Guadalupe Coyote Resource Conservation District ("GCRCD"), Santa Clara County Creeks Coalition ("SCCCC"), and Trout Unlimited submit these comments in response to the Santa Clara Valley Water District's ("District") Notice of Preparation ("NOP") of a Draft Environmental Impact Report ("DEIR") for the Fish and Aquatic Habitat Collaborative Effort ("FAHCE") Program and Fish Habitat Restoration Plan. We thank the District for the additional time to provide comments.

We have a long history with the FAHCE Program, collectively. The GCRCD filed the water rights complaint with the State Water Resources Control Board ("SWRCB") that led to the FAHCE settlement negotiations.[1] California Trout, the GCRCD, and Trout Unlimited initialed the FAHCE Settlement Agreement in 2003. American Rivers and the SCCCC subsequently joined these groups in their efforts to work with the District and other stakeholders to implement the FAHCE Settlement Agreement, and more specifically the Fisheries Habitat Restoration Plan. We continue to cooperate with the District in its efforts to obtain regulatory approvals necessary to implement the FAHCE Agreement.

In particular, we will participate in the technical workshop and scientific panel the District is convening on March 23, 2015. This workshop is intended to assist the parties to the FAHCE Agreement reach agreement on the technical methods and data that will be used to resolve the details of the Fisheries Habitat Restoration Plan. We thank the District for working to build stakeholder support for the FAHCE Program in advance of the matter being set for hearing before the SWRCB. It is our hope that collaboration now will avoid contested regulatory proceedings before the SWRCB and other jurisdictional resource agencies.

[1] That complaint is still before the SWRCB, but has been stayed as the District and initialers of the FAHCE Settlement Agreement work to implement that agreement.

Compliance with the California Environmental Quality Act ("CEQA") is a prerequisite to the SWRCB's amendment of the District's water rights and the California Department of Fish and Wildlife's issuance of related permits. Under CEQA, the EIR should be sufficient to provide the resource agencies and public with detailed information about the potential environmental effects (even though the project is intended to have beneficial environmental effects), identify appropriate mitigation for any negative effects, and identify feasible and reasonable alternatives to the proposed project. The following comments are intended to help the District achieve these purposes for the EIR.

1. The EIR Should Include a Complete and Accurate Project Description.

a. Description of Program Components

The EIR must include a complete and accurate description of the project in order to permit a thorough evaluation of the environmental impacts, mitigation measures, and alternatives.[2]

The NOP identifies three elements of the FAHCE Fish Habitat Restoration Plan: (1) Flow Measures; (2) Habitat Improvement Measures; and (3) Biological Monitoring/Adaptive Management.[3] The District's proposed Flow Measures are described as specific Reservoir Re-operation Rule Curves.[4] The other two elements of the plan are less well-defined, in part because the specific measures for these elements were not fully resolved by the FAHCE Settlement Agreement.

The EIR's description of the Habitat Improvement and Biological Monitoring/Adaptive Management elements should include additional specificity. For example, the Fish Habitat Restoration Plan should establish specific biological goals based on the FAHCE settlement goals of restoring the salmon and steelhead populations to a healthy condition. The FAHCE Settlement Agreement expressly provides that the Adaptive Management Program will include:

> Measurable objectives consistent with the Phase One, Two, and Three management objectives for the steelhead trout and salmon fisheries and their habitats in the watershed subject to the Agreement. . . . Measurable objectives will be developed for flow measures, including maintenance of suitable water temperatures for summer steelhead rearing, performance of fish passage facilities, and other non-flow measures.[5]

The plan should also consider the targets of the Steelhead Recovery Plan as one set of measureable objectives for the FAHCE goals.

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2 14 Cal. Code Regulations § 15124; *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 192 (1977).
3 NOP, p. 3.
4 *Id.*
5 FAHCE Settlement Agreement § 7.3(A).

The Fish Habitat Restoration Plan should also include a schedule for implementation of the non-flow habitat improvement measures. While the parties to the FAHCE Settlement Agreement contemplated securing regulatory approvals and starting implementation within two years,[6] twelve years have now passed since the agreement was initialed. Given this considerable lapse of time, it is important that the Fish Habitat Restoration Plan include a specific implementation schedule, subject to adjustment based on factors that are not within the District's reasonable control.

We understand that the District will provide a more complete description of the Fish Habitat Restoration Plan in the EIR. We further understand that the specific measures proposed for the Habitat Improvement and Biological Monitoring/Adaptive Management elements will be informed in part by the technical workshop on March 23. We look forward to participating in the workshop and any subsequent meetings and reviewing the plan.

b. Description of Program Purpose

The project description in the EIR must include a "statement of the objectives sought by the proposed project."[7]

As stated by the NOP, the FAHCE Settlement Agreement "includes the development and implementation of a fisheries habitat restoration plan for North county streams with water supply reservoirs."[8] The purpose of the Fisheries Habitat Restoration Plan is to "restore and maintain healthy steelhead trout and salmon populations as appropriate to each of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles."[9] We agree with this purpose statement, but again note that the EIR must provide additional information regarding specific measures and schedule for implementation that are proposed under the Fisheries Habitat Restoration Plan.

2. The EIR Should Include an Accurate Baseline Description of the Fisheries.

The EIR "must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published."[10] "Knowledge of the regional setting is critical to the assessment of environmental impacts. Special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.[11]

The steelhead and salmon fisheries are imperiled within the Three Creeks and throughout the region; although, unlike steelhead, Chinook salmon are not listed under the federal Endangered Species Act. Consistent with the applicable CEQA regulations, the EIR should

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6 FAHCE Settlement Agreement § 5.2.
7 14 Cal. Code of Regulations § 15124(b).
8 NOP, p. 2.
9 *Id.*
10 14 Cal. Code of Regulations § 15125(a).
11 *Id.* at § 15125(c).

include a description of the baseline condition of the steelhead and salmon fisheries. To this end, preparation of the EIR should include the field work needed to resolve the key fisheries management issues left unresolved at the time the FAHCE Settlement Agreement was initialed. This should include the population and migration work necessary to determine current fish population levels and the ways in which the fish utilize both the fresh water and estuarine waters in order to develop and evaluate proposed and alternative conservation measures necessary to achieve the biological goals of the FAHCE Program.

We note that at the time the FAHCE Settlement Agreement was initialed there was some dispute as to whether Chinook salmon were native to the Three Creeks. We submitted evidence, including a report by the California Department of Fish and Game,[12] that the fish were native, but we understand that some District Staff disputed this. Regardless, the FAHCE Agreement commits to restore both the steelhead and salmon fisheries to these waters. Further, the District's obligations under the Fish and Game[13] and Water Codes[14] are not limited to the protection of native fisheries. To the extent the discussion in the EIR disputes that the salmon are native to these waterways, it should also summarize the evidence that shows they are.

3. The EIR Should Evaluate a Reasonable Range of Alternatives.

The EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation."[15] The discussion of alternatives must "include sufficient information about each alternative to allow evaluation, analysis, and comparison with the proposed project."[16]

We request that the District consider the following alternative measures in the EIR, which we believe could feasibly contribute to the attainment of the FAHCE Program goals.

a. Cold-water Flow Versus Extended Wetted Flow Length Strategy

The EIR should compare the "cold water flow" versus the "extended flow length" strategy for managing water in the Three Creeks.[17] This should include a comparison of the impacts of these strategies on water storage, temperature, length of wetted creek, support for smolt outmigration, pulse flows for different rainfall years. It should include a review of the technical literature for both cold water management and for the hypothesis that steelhead have adapted to higher temperatures in areas where food production compensates for the metabolic stress of higher temperatures. It should also clarify the differences of these flow strategies on each of the Three Creeks.

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12 John E. Skinner, California Department of Fish and Game, *An Historical Review of the Fish and Wildlife Resources of the San Francisco Bay Area* (1962) (FAHCE Complaint, Exhibit 5).

13 *See* Cal. Fish and Game Code § 5937 ("The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition *any fish* that may be planted or exist below the dam." (emphasis added)).

14 *See generally* Cal. Water Code § 275.

15 14 Cal. Code of Regulations § 15126.6(a).

16 *Id.* at § 15126.6(d).

17 The "Three Creeks" include Coyote Creek, Guadalupe River, and Stevens Creek.

Consistent with section 6.2.4.5 of the FAHCE Settlement Agreement, the EIR should also evaluate the feasibility and suitability of using urban water (e.g., recycled water, stormwater discharges) to enhance the continuity of instream flow suitable for achieving the FAHCE management objectives in the Three Creeks, from the highest point of fish passage downstream to the San Francisco Bay.

b. Strategy for Preserving Steelhead During Drought

The EIR should consider alternative strategies for preserving steelhead during drought in the recovery period, including: (1) reserving enough water in Anderson Reservoir to sustain Coyote Creek during the drought; (2) rescuing and relocating fish; and (3) providing supplementary water by groundwater pumping or recycling of stream flow.

c. Temperature Refugia for Steelhead in the Guadalupe River

There is evidence that seeps, springs and pumped groundwater provide patches of coldwater habitat that allow salmonids to persist, and even thrive, in District managed stream reaches where average conditions in the reach have lethal mean water column temperatures. The EIR should (1) identify areas of thermal refugia for steelhead, (2) survey District management practices for pumped groundwater from buildings and transportation facilities, and (3) evaluate alternative management practices that might enhance temperature refugia for steelhead.

d. Chinook Salmon Conservation Measures

The EIR should identify and evaluate alternative conservation measures that address the unique needs of Chinook salmon. Consideration should be given to (1) flow related conservation measures during wet years that do not compete with the needs of steelhead, (2) development of flow/spawning refugia to improve spawning success, and (3) other means of increasing spawning gravel quality. For example, there is evidence that salmon redds are being scoured or smothered by winter flows/sediment loads in the current stream configuration. As indicated above, appropriate field work in preparation for the EIR would include spawning gravel quality and quantity surveys, pit tagging to identify movement patterns of Chinook between the stream and the estuary, and identification of potential flow/spawning refugia.

e. Facilities owned by others

The EIR should consider alternative habitat improvement measures that include addressing facilities owned by others in the achievement of the biological goals, including the use of partnerships. This approach was used to implement stream improvements at Blackberry Farm on Stevens Creek and is being considered for Singleton Road in San Jose. The fact that these facilities are owned by others should not be a barrier to their evaluation in the EIR.

4. <u>The EIR Should Evaluate the Cumulative Impacts of the FAHCE Program and Other Projects on the Three Creeks</u>.

Under CEQA, the EIR must describe, in detail, the significant effects on the environment of the project, including cumulative effects.[18] The purpose of the cumulative impacts analysis, specifically, is to prevent the environmental harm that could result from the piecemeal approval of several projects with related impacts.[19] The EIR must focus on the collective impact of the proposed project and other projects on the affected resources, not just the proposed project's relative effects to the overall problem.[20]

In order to ensure an adequate evaluation, the EIR's cumulative impacts analysis must include the following elements:

- "A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency";[21]

- "A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available"; and

- "A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects."[22]

The EIR's cumulative impacts analysis should include a discussion of the effects of the Guadalupe River Lower, Downtown, and Upper Flood Control Projects. The District is the local sponsor and has construction, operation, maintenance responsibilities for the projects. These projects impact the same fisheries that will be impacted by the FAHCE Program.

The EIR should also include a discussion of the effects of the homeless encampments located along the Three Creeks. The presence of encampments along these creeks results in pollution of the public waters and surrounding lands, death and harassment of spawning anadromous fish and other wildlife, degradation of aesthetic quality, and other interference with public use and enjoyment. This discussion should include a description of foreseeable plans to address the encampments, including any measures to prevent discharge of waste from

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[18] 14 Cal. Code Regs. §§ 15355, 15358; *City of San Diego v. Board of Trustees of Cal. State University*, 135 Cal.Rptr.3d 495, 507 (Cal. Ct. App. 2012).

[19] *San Joaquin Raptor*, 27 Cal.4th at 720; *Las Virgenes Homeowners Fed'n v. County of Los Angeles*, 177 Cal.App.3d 300, 306 (Cal. Ct. App. 1986).

[20] *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 721 (Cal. Ct. App. 1990).

[21] In the alternative, the cumulative impacts analysis may provide "[a] summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect." 14 Cal. Code Regs. § 15130.

[22] *Id.*

encampments into the creeks. The EIR should also address how the presence of the encampments will affect the District's planned efforts to implement the Fisheries Habitat Restoration Plan.

CONCLUSION

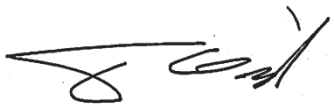
Thank you for considering these comments. We look forward to working with the District, resource agencies, and other stakeholders to obtain regulatory approvals necessary to implement the FAHCE Agreement. Please contact us with any questions regarding these comments.

Respectfully Submitted,



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Nicholas Niiro
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Attorneys for AMERICAN RIVERS, CALIFORNIA TROUT, GUADALUPE RESOURCE CONSERVATION DISTRICT, and SANTA CLARA COUNTY CREEKS COALITION



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Appendix B – Scoping Announcement, Scoping Invitation Letters, and Email Notifications

PUBLIC SCOPING MEETING

Project Title: Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Project Location: Santa Clara County, California

The Santa Clara Valley Water District (District) is preparing an environmental impact report (EIR) in support of the FAHCE Fish Habitat Restoration Plan for the Three Creeks - Guadalupe River, Coyote Creek, and Stevens Creek - for which the District holds water rights licenses. The 2003 FAHCE Initialed Draft Settlement Agreement included the development and implementation of a fish habitat restoration plan, which was intended to identify specific and programmatic actions to support the overall management objectives to "restore and maintain healthy steelhead trout and chinook salmon populations as appropriate to each of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and chinook salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles." The plan proposes modifications to District reservoir operations and programmatic actions to improve, as appropriate, habitat conditions in the Three Creeks area. Biological monitoring and an adaptive management plan are also proposed to ensure management objectives are met.

The EIR Notice of Preparation was posted for public review in February 2015. The NOP (State Clearinghouse# 2015022008) is on file at the Office of Planning and Research, and the District's website: http://www.valleywater.org/xxxx. The District has scheduled this scoping meeting to provide an opportunity for public input on the scope and content to be addressed in the EIR.

Public Scoping Meeting
Monday, June 19, 2017 from 4:00pm to 6:00pm
Santa Clara Valley Water District Board Room at 5700 Almaden Expressway, San Jose, CA 95118

The format of the scoping meeting is an open workshop and will be held from 4:00-6:00 p.m. The public can attend at any time between those hours. Information on the project description and features of the project will be posted at focused working tables and project team members will be available to accept written comments from the community. During and following the meeting, scoping comments from the public will be accepted in writing through Friday, June 30 at 5:00pm. Comment cards and project contact information will be made available at the meeting and on the District website.

For further information, please contact:
Ms. Sarah Young
Santa Clara Valley Water District
(408) 265-2600 or email: Scoping4FAHCE@valleywater.org

Reasonable efforts will be made to accommodate persons with disabilities wishing to attend this public meeting. For additional information on attending this hearing, including requesting accommodations for disabilities or interpreter assistance, please contact at (408) 265-2600, or at least three business days prior to the meeting.

Appendix C – Open House Materials

Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

(*please print clearly*)

Name: _____ Date: _____

Address: _____

City, State, Zip: _____

Contact Phone Number: _____

Email: _____

I would like to make the following comment(s):

_____

_____

_____

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_____

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

ADDITIONAL STEVENS CREEK HABITAT RESTORATION MEASURES

OVERALL MANAGEMENT OBJECTIVE

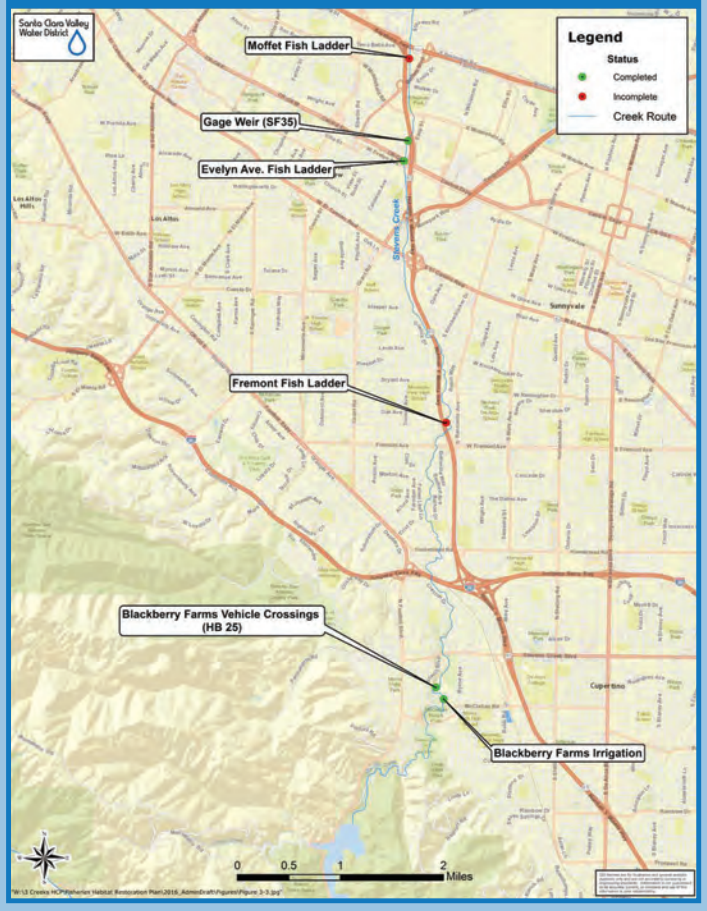
Restore and maintain a healthy steelhead trout population in the Stevens Creek watershed, by providing:

- **A** Suitable spawning and rearing habitat below Stevens Creek Dam within a cold water management zone through the development of an operations plan
- **B** Adequate passage for adult steelhead trout to reach suitable spawning and rearing habitat and for out-migration of juveniles

OTHER SETTLEMENT AGREEMENT PHASE 1 MEASURES FOR STEVENS CREEK WATERSHED

1. Enhance Spawning and Rearing Habitats for Steelhead Trout
2. Enhance Fish Passage to Suitable Spawning and Rearing Habitat
3. Prepare a Geomorphic Functions Study
4. Install and Operate a Portable Multi-port Outlet at Stevens Creek Reservoir
5. Install and Operate a Hypolimneal Aeration Device at Downstream End of Reservoir Outlet
6. Feasibility Study of Trap and Truck at Stevens Creek Reservoir

STEVENS CREEK FISH BARRIERS



Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

ADDITIONAL GUADALUPE RIVER HABITAT RESTORATION MEASURES

OVERALL MANAGEMENT OBJECTIVE

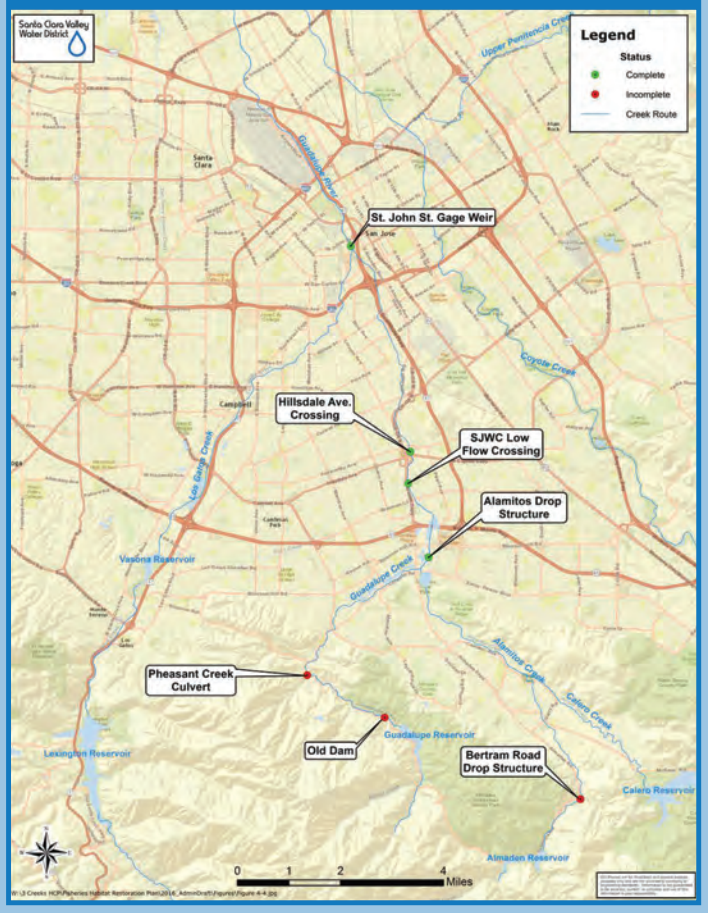
Restore and maintain healthy steelhead trout and salmon populations in the Guadalupe River watershed, by providing:

- **A** Suitable spawning and rearing habitat for steelhead trout and salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River
- **B** Suitable spawning and rearing habitat for salmon below Calero and Almaden Dams to their confluence with Lake Almaden
- **C** Suitable spawning and rearing habitat for salmon in Los Gatos Creek from Camden Avenue to its confluence with Guadalupe River
- **D** Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles

OTHER SETTLEMENT AGREEMENT PHASE 1 MEASURES FOR GUADALUPE RIVER WATERSHED

1. Enhance Spawning and Rearing Habitats for Steelhead Trout and Chinook Salmon
2. Enhance Fish Passage to Suitable Spawning and Rearing Habitat
3. Prepare a Geomorphic Functions Study
4. Complete and Implement an Alamitos Creek Facilities Plan

GUADALUPE RIVER FISH BARRIERS



Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

ADDITIONAL COYOTE CREEK HABITAT RESTORATION MEASURES

OVERALL MANAGEMENT OBJECTIVE

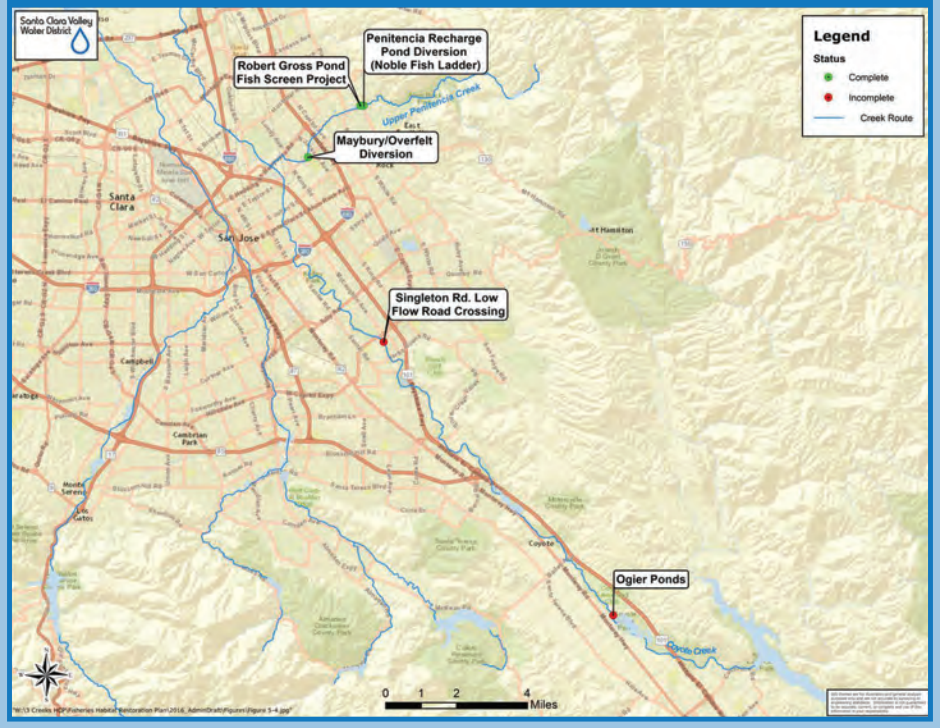
Restore and maintain a healthy steelhead trout and salmon population in the Coyote Creek watershed, by providing:

- **A** Approximately five miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek
- **B** Adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles

OTHER SETTLEMENT AGREEMENT PHASE 1 MEASURES FOR COYOTE CREEK

1. Enhance Spawning and Rearing Habitats for Steelhead Trout and Chinook Salmon
2. Enhance Fish Passage to Suitable Spawning and Rearing Habitat
3. Prepare a Geomorphic Functions Study
4. Complete a Coyote Creek Facilities Plan
5. Best Effort to Develop Cherry Flat Reservoir Operations Agreement with City of San Jose
6. Feasibility Study of Trap and Truck at Anderson Reservoir

COYOTE CREEK FISH BARRIERS



Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

EIR MEASURES:
FISH & AQUATIC HABITAT

EXAMPLES OF COMPLETED MEASURES

STEVENS CREEK
Stevens Creek corridor





GUADALUPE RIVER
Hillsdale Avenue Bridge





COYOTE CREEK
Penitencia Creek Unscreened Mabury-Noble Avenue





Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

EIR MEASURES:
FISH & AQUATIC HABITAT

EXAMPLE OF REACHES OF INTEREST



Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

EIR MEASURES:
PROPOSED RULE CURVES AND WATER OPERATIONS

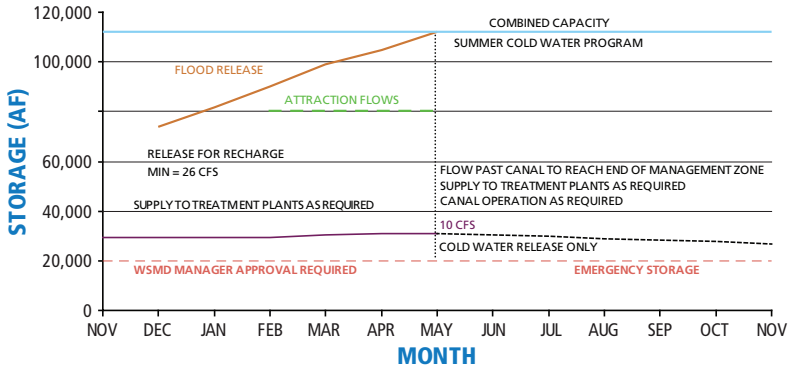
WINTER BASE FLOWS

Reservoir releases, made between November 1 and April 30, to improve winter and springtime spawning and incubation habitat for salmonids. Winter base flows combined with stormwater runoff provide flow cues to immigrating salmonids.

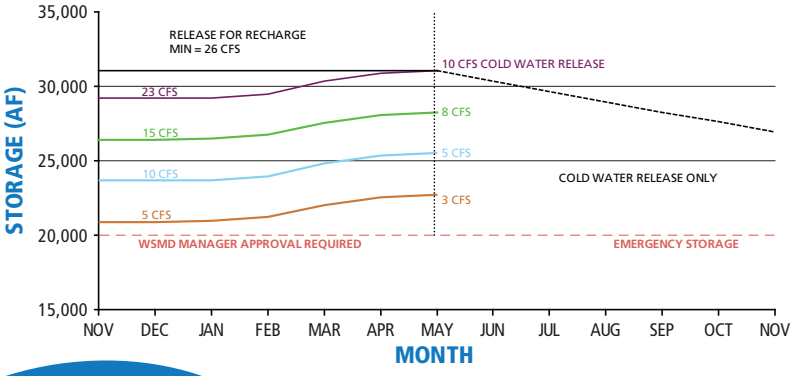
ATTRACTION FLOWS

If sufficient storage is available, pulse flows are reservoir releases of 50 cfs for a period of five consecutive days made between February 1 and April 30. Upstream passage for adults will be enhanced by providing a greater volume of water over potential barriers. These short-term pulse events will also benefit emigrating juveniles by facilitating their downstream migration from the upper watershed to San Francisco Bay.

ANDERSON/COYOTE RESERVOIRS OPERATION RULE CURVES



ANDERSON/COYOTE RESERVOIRS LOW STORAGE RULE CURVES



SUMMER BASE FLOWS

Summer base flows will be made between May 1 and October 31, based on each reservoir's reoperation rule curve, to enhance summer rearing conditions. Below Anderson, Guadalupe, and Stevens Creek dams, the District will maintain cold water management zones (CWMZs) along designated lengths of stream to provide over-summer refugia for rearing steelhead based on available cold water in the reservoirs.

FLOW RAMPING

Flow ramping manages changes in the rate of flow reductions in a slow, stepwise fashion, helping fish and other aquatic life avoid stranding. Ramping will occur whenever District-controlled flows will be changed by 50 percent or more from the existing flow condition.

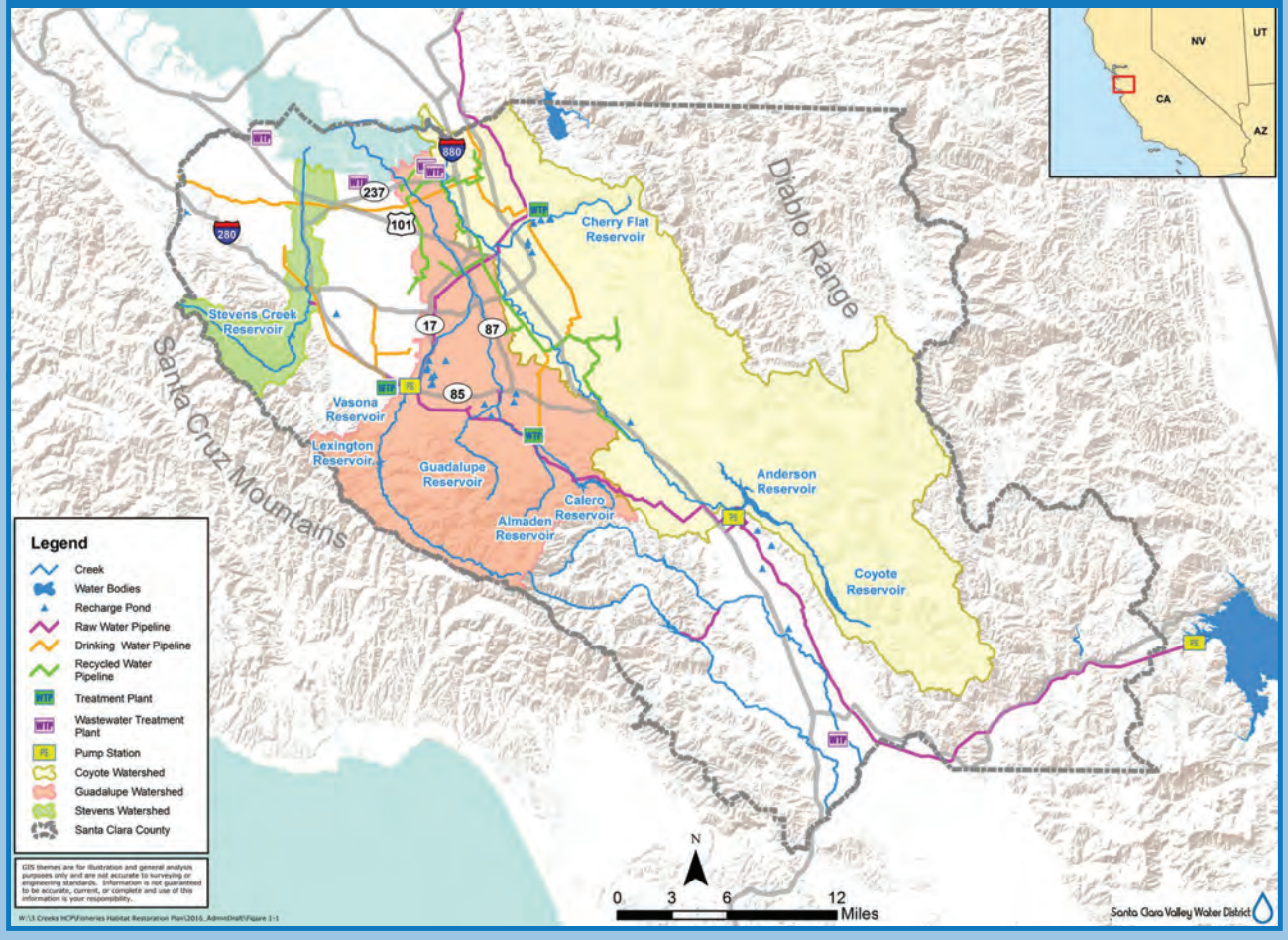
Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

PROJECT OVERVIEW
PROJECT AREA

FISH AND AQUATIC HABITAT COLLABORATIVE EFFORT (FAHCE)

Fish Habitat Restoration Plan Project Area



Santa Clara Valley Water District

FAHCE Fish Habitat Restoration Plan EIR

PROJECT OVERVIEW

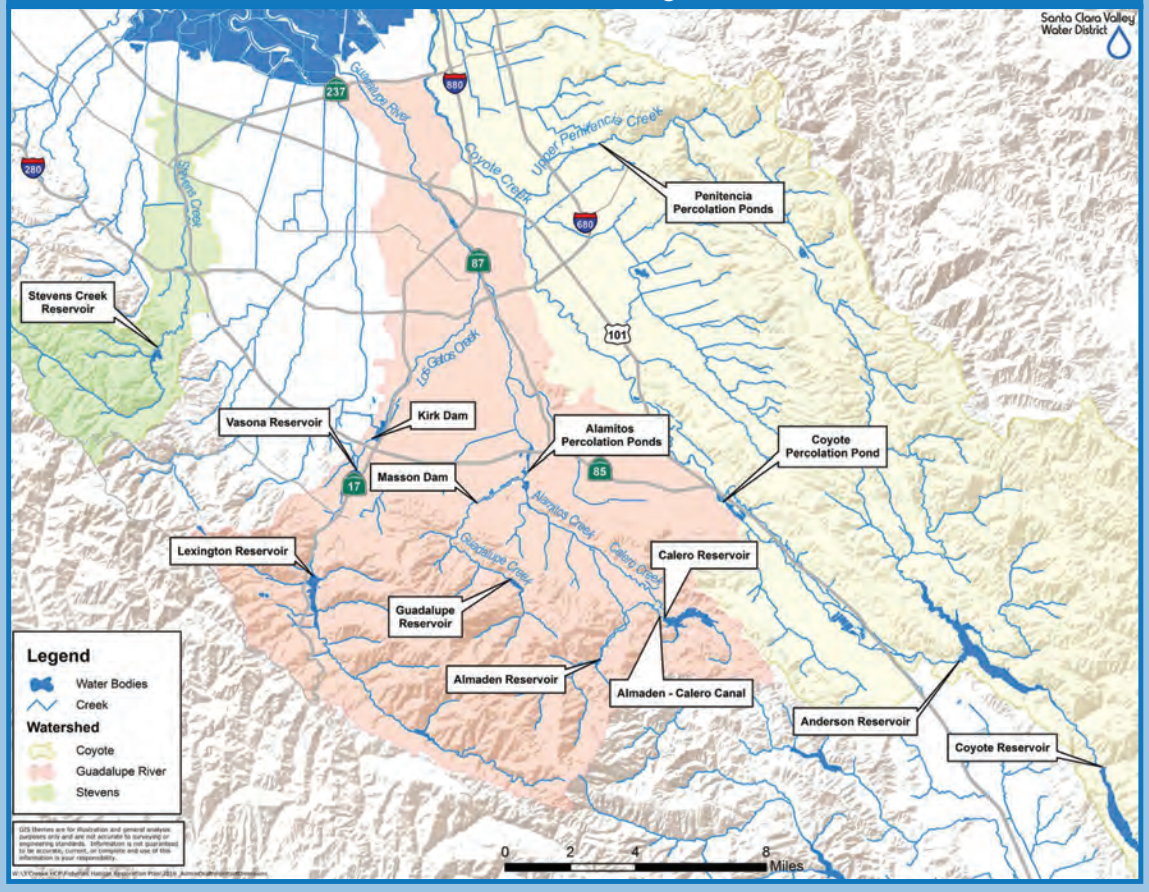
DOCUMENTS

A Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creek

B Fish Habitat Restoration Plan: Stevens Creek, Coyote Creek and Guadalupe River

Chapter 1: Introduction
Chapter 2: Three Creeks Common Elements
Chapter 3: Stevens Creek Watershed (Phase 1 Measures)
Chapter 4: Coyote Creek Watershed (Phase 1 Measures)
Chapter 5: Guadalupe River Watershed (Phase 1 Measures)
Chapter 6: Monitoring Program
Chapter 7: Adaptive Management Program
Chapter 8: Plan Implementation
Chapter 9: Bibliography

Three Creeks Points of Diversion/Water Rights



Appendix D – Meeting Attendance

SIGN IN SHEET

FAHCE Program EIR Scoping Workshop

Monday, June 19, 2017

4:00 - 6:00 P.M.

	NAME	ORGANIZATION	EMAIL	PHONE
1	Kit Gordon	Grassroots Ecology (Permanente Riparian)	kitgordon@me.com	650-787-9580
2	Lisa Lucas		JLUCAS1094@aol.com	650.948-3552
3	Norm Ponferrada	AECOM	norm.ponferrada@aecom.com	209-598-7826
4	Roger Castillo	GCRCD	rocastl@comcast.net	408-288-5888
5	Doug Muirhead	Public Member Alt	DOUGMUIRHEAD@STANFORDALUMNI.ORG	
6	Susan Glendening	SF Water Board	susan.glendening@waterboards.ca.gov	510 622 2462
7	DAVE POESCHEL	SIERRA CLUB	dave.poeschel@gmail.com	408 416-3889
8	Steve Leach	AECOM	steve.leach@aecom.com	510-874-3705
9	GARY JAHNS	GCRCD	gcjahns@comcast.net	408 578 5040
10	TIM GUSTER	GBUL	tguster@greatoaksw.com	408.227.9540
11	Mackenzie Mossing	Santa Clara Valley Audubon Society	mackenzieSCVAS@gmail	4083940330
12	Matt Freeman	SCVOSA	mfreeman@openspace.org	408/224-7446
13	GLORIA McCLAIN	ULISTAC	GMcinSJ@webtv.net	408-259-2588
14				

SIGN IN SHEET

FAHCE Program EIR Scoping Workshop

Monday, June 19, 2017

4:00 - 6:00 P.M.

	NAME	ORGANIZATION	EMAIL	PHONE
29	PERRY HENRY		perry.g.henry	408 449-9933
30	GARY STERN	NMFS	gary.stern@noaa.gov	707 575 6050
31	Katja Irvin	Sierra Club	katja.irvin@sbcglobal.net	408 569-8214
32				
33				
34				
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42				

SIGN IN SHEET

FAHCE Program EIR Scoping Workshop

Monday, June 19, 2017

4:00 - 6:00 P.M.

	NAME	ORGANIZATION	EMAIL	PHONE
15	Bill Martin	AECOM	bill.h.martin@aecom.com	510-874-3020
16	STEVE HOLMER	SBCCC	FRIENDSOFCREEK@YAHOO.COM	408 529-4460
17	RICHARD MCMURTRY	Santa Clara County Parks Coalition	RICHARD@SCCREEKS.ORG	408 [illegible] 1932
18				
19				
20				
21				
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25				
26				
27				
28				

Appendix E – Scoping Comments

No.	Date	Comment Received	Method of Receipt
1	6/13/17	Monika Gardias (1 of 2)	Email
2	6/13/17	Monika Gardias (2 of 2)	Email
3	6/15/17	Richard McMurtry (Santa Clara County Creeks Coalition) (1 of 3)	Comment Letter
4	6/19/17	Gloria McClain	Scoping Meeting Comment Form
5	6/19/17	Kit Gordon	Scoping Meeting Comment Form
6	6/19/17	Libby Lucas (1 of 2)	Scoping Meeting Comment Form
7	6/19/17	MacKenzie Mossing	Scoping Meeting Comment Form
8	6/19/17	Richard McMurtry (2 of 3)	Scoping Meeting Comment Form
9	6/19/17	Richard McMurtry (3 of 3)	Scoping Meeting Comment Form
10	6/19/17	Steve Holmes	Scoping Meeting Comment Form
11	6/26/17	Libby Lucas (2 of 2)	Email
12	6/29/17	Doug Muirhead	Email
13	6/30/17	Katja Irvin (Sierra Club)	Comment Letter
14	6/30/17	Cherise Orange (Santa Clara County Parks)	Comment Letter
15	6/30/17	Susan Glendening (Water Board)	Comment Letter
16	6/30/17	Julie Gantenbein (Water Power Law)	Comment Letter
17	6/30/17	Jerry Smith	Email

From:	monikajg@netzero.net
To:	Scoping4FAHCE
Subject:	fish habitat restoration along Los Gatos Creek in San Jose
Date:	Tuesday, June 13, 2017 4:15:30 PM

Hi:
Please explain reasons why you are not doing fish habitat restoration along Los Gatos Creek in San Jose despite of fact that you are going to do that for three other creeks? It is supposed to be a habitat for endangered trout.
Thank you very much
Monika Gardias

_____
Brilliant Trick Melts Belly Fat Overnight (Do This Tonight)
Diet Insider
http://thirdpartyoffers.netzero.net/TGL3241/594071e26236871e236ddst04duc

Eva Marie Sans

From: monikajg@netzero.net
Sent: Tuesday, June 13, 2017 5:12 PM
To: Scoping4FAHCE
Subject: Fish habitat restoration along Los Gatos Creek in San Jose

Dear Sarah Young:
Thank you very much for working on restoring fish habitats along creeks in Santa Clara Valley. We are all happy to hear about this.
I would like to please propose that a spread of Los Gatos creek from Blackford School to Meridian Ave and beyond be included in this project. It is a historical route for endangered trout species and a perfect place for fish habitat. I would be happy to meet with you and show you the creek.
Kindly please let me know the decision in regards to this part of the creek and keep me updated on the project.
Again thank you very much for doing this project.
Monika Gardias
408-569-8887

_____

(7) Signs That Your Body Is Fighting Cancer (Photos) obviouslybored.com
http://thirdpartyoffers.netzero.net/TGL3241/59407f818b6577f81473cst04duc

From: Richard McMurtry
To: Sarah Young
Subject: comments on FAHCE
Date: Thursday, June 15, 2017 11:53:58 AM
Attachments: image001.png
letter to Sarah Young 15 June 2017.doc

Sarah,

Attached are my comments on FAHCE EIR.

Richard

SCCC_logo7

Richard McMurtry
Santa Clara County Creeks Coalition
http://www.sccreeks.org
24010 Summit Road
Los Gatos, CA 95033
408-442-4932

Santa Clara County Creeks Coalition

Advocates for living streams

Member Organizations

Friends of Coyote Creek

Western Waters Canoe Club

Northern California Council
Federation of Fly Fishers

15 June 2017

Sarah Young
SCVWD
By email

Re: Comments on Scoping for FAHCE

Dear Ms Young,

Thank you for the opportunity to comment on the FAHCE EIR.

1. The minimum requirement for an EIR is to compare the project against existing conditions. We recommend that the District as a matter of policy construct the EIR to ALSO evaluate the degree to which the proposed project will achieve the habitat conditions necessary to restore the fishery. If the EIR concludes that there is a net environmental benefit by lowering temperatures, that is one level of environmental evaluation. But the environmental question is whether the resulting temperatures will achieve habitat conditions suitable for the spawning and rearing of salmonid fish. This requires another level of analysis and the EIR should make that analysis.

2. The prior version of the Fishery Habitat Restoration Plan did not address the temperature impairments on Los Gatos Creek where District facilities elevate temperatures 15 degrees Fahrenheit resulting in temperatures above the levels suitable for the rearing of steelhead trout during the summer in 6 miles of stream accessible by steelhead trout. The EIR should evaluate the temperature conditions resulting from the project in comparison to the temperatures suitable for steelhead rearing during the summer and evaluate alternatives to achieve suitable temperatures.

3. The prior version of the Fishery Habitat Restoration Plan did not address the temperature and habitat impairments caused by the Alamitos Drop Structure and its flashboard dam. The EIR should evaluate the impact of the proposed project on the temperature conditions and habitat suitability for rearing and spawning in the reaches of Alamitos Creek between the southern end of Lake Almaden and the Drop Structure.

4. The EIR should address the temporal impacts of the project on the fishery by clarifying the schedule for implementing the projects identified in the Fishery Habitat Restoration Plan. Without a schedule for project implementation, the temporal impacts of the project on the environment is undefined.

Sincerely,

Richard McMurtry

Richard McMurtry
Board Member

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: Kit Gordon Date: 6/19/17

Address: 27800 Central Dr

City, State, Zip: Los Altos Hills, CA 94022

Contact Phone Number: 650-787-9580

Email: kitgordon@me.com

I would like to make the following comment(s):

1. ~~Turbidity affects~~ What are turbidity goals downstream of dams as compared to upstream of dams?
2. Will dam lifetime expectancy be considered in FAHCE? Should certain dams be removed, redistributed or replaced?
3. Permanente Creek is part of Stevens Creek watershed. Historically the two were intertwined. ~~Is~~ Can Permanente Creek be included in FAHCE? Can the Permanente - Stevens diversion channel be included in FAHCE? Removal of this concrete channel will improve ground water recharge and expand salmonid habitat.
4. How will groundwater management affect stream flows? Will ground water pumping ~~=~~ lower stream flows in certain areas? Can it be modeled or measured
5. Will invasive, non-native species that have thrived due to water utility operations be considered? What are plans to remove or reduced these pest species?, especially ones that impact survival or habitat for salmonids?

Thanks!

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: STEVE HOLMES Date: 6/19/17

Address: PO BOX 7633

City, State, Zip: SAN JOSE CA 95150

Contact Phone Number: (408) 529-4460

Email: FRIENDSOFCOYOTECREEK@YAHOO.COM

I would like to make the following comment(s):

ATTACHED ARE (2) REPLIES IN EMAIL STRETCH.
1) BRIAN ALLEE
2) CHUCK HAMMERSTAD

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Subject: Re: Certified Mail
From: Steve Holmes (friendslgcreek@yahoo.com)
To: friendslgcreek@yahoo.com;
Date: Monday, June 19, 2017 9:02 AM

SOUTH BAY CLEAN CREEKS COALITION
Reclaim • Restore • Revitalize • SBCCC

Steve Holmes 408-529-4460
Executive Director
PO Box 7633 San Jose CA 95150
Email: friendslgcreek@yahoo.com
Website: http://sbcleancreeks.myevent.com/

From: Brian Allee <allee.keta@gmail.com>
To: chamerstad@aol.com; friendslgcreek@yahoo.com; r.koury@sbcleancreeks.com
Sent: Sunday, June 18, 2017 11:04 PM
Subject: Re: Certified Mail

Hi Steve,
I am still on vacation in Oregon but back later in the week. I agree with Chuck's comments for sure. I am also concerned with adequate flow for fish passage for both adults coming in and juveniles moving downstream. In addition, the use of perk ponds in the main stream channel is a major impact on the survival and growth and movement of salmon juveniles within the watershed. SCVWD needs to implement off stream perk ponds using pumping technology as NOAA Fisheries suggested in the past.
I wish I could have attended the meeting but hopefully there will be another chance in the future.
Thanks,
Brian Allee, Fisheries Biologist, South Bay Clean Creeks Coalition

From: chamerstad@aol.com
Sent: Wednesday, June 14, 2017 10:49 AM
To: friendslgcreek@yahoo.com ; r.koury@sbcleancreeks.com ; allee.keta@gmail.com
Subject: Re: Certified Mail

Steve, Brian and Rick,

I agree flows to support spawning and rearing are important. With the dams in place, gravel is trapped behind the dams and prevents natural movement of gravel below the dams. Another recommendation would be a gravel augmentation program at appropriate location within the watersheds for enhancement of natural spawning for both Salmon and Steelhead.

I would like to attend the meeting, but I am in Hawaii and will not return until June 21.

Chuck Hamerstad, Past President, SJ Flycaster Conservation Committee

-----Original Message-----
From: Steve Holmes <friendslgcreek@yahoo.com>
To: Rick Koury <r.koury@sbcleancreeks.com>; Brian Allee < allee.keta@gmail.com>
Cc: Chuck Hammerstad < chamerstad@aol.com>
Sent: Tue, Jun 13, 2017 10:27 am
Subject: Certified Mail

SCVWD fwd'd the attached letter via Certified Mail to our PO Box. It is regarding FACHE, do you all have any comments we should roll-up linked to this? One item that comes to mind for me is flow rates; last year's flows prevented upstream movement. From what I heard they will monitor flows at stations along the stream but due to the natural absorption we saw flows drop to 1 CFS along LG Creek so having a consistent flow from top to bottom would be my input.

Steve Holmes
South Bay Clean Creeks Coalition
408.529.4460

Website: South Bay Clean Creeks Coalition
Follow us: Facebook South Bay Clean Creeks Coalition

*Requests a copy of Settlement Agreement

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: LIBBY LUCAS Date: 6-19-2017

Address: 174 YERBA SANTA AVE.

City, State, Zip: LOS ALTOS, CA 94022

Contact Phone Number: 650 948-3552

Email: JLUCAS1099@aol.com

I would like to make the following comment(s):

CONCERNS/ELEMENTS THAT BELIEVE CRITICAL TO INCLUDE IN FAHCE (EIR) RELATIVE TO STREAM FLOWS AND QUALITY of WATER

— TASTE - for anadromous fishery - essential stream flows
✓ SMELL are representive in smell and taste of watershed

— TEMPERATURE - STREAM NEEDS SHADED RIPARIAN CORRIDOR and DEEP POOLS - FOR HOLDING OVER IN MIGRATION REFUGIA AND WOODY DEBRIS AND UNDERCUT BANKS

— RIFFLES AND SPAWNING GRAVELS IN APPROPRIATE REACHES

— TIMING OF PULSE FLOWS SHOULD ATTEMPT TO MIMIC NATURAL STORM EVENTS - ✓BE USABLE - NOT DRIP FLOW

— PULSE FLOWS MIGHT BE MOST EFFECTIVE 11 PM TO 5 AM FOR FISH MIGRATION & ECONOMY OF WATER RESOURCES

all — OBSTRUCTIONS - DROP STRUCTURES - NEED STEP POOLS CEMENT CONDUITS SHLD BE AVOIDED OR FISH LADDERS

IF TREATMENT PLANT WATER (REVERSE OSMOSIS) will it taste or smell right to local fish hum

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

From: JLucas1099@aol.com
To: Scoping4FAHCE
Subject: FAHCE Scoping Comments for Fish Habitat Restoration Plan Draft EIR
Date: Monday, June 26, 2017 10:00:33 AM

Dear Sarah Young and Santa Clara Valley Water District Board, June 26, 2017

It was gratifying to hear the strong SCVWD Board support for implementation of a FAHCE EIR at last week's well attended June 19 Public Scoping Meeting.

Decades ago when I had opportunity to review earliest EIR done for expansion of San Jose-Santa Clara Water Quality Treatment Plant do remember environmental statement that South Bay is incubator for the fisheries of the San Francisco Bay Estuary and the Estuary is incubator for fisheries of the Pacific Ocean.

Have always felt this 'historical' assessment to be inspirational as to potential of Santa Clara County streams to bring the South Bay back to full ecological health and hydrology.

With this extensive canvas it would seam advisable to indicate practical priorities in initial assessment for re-establishment of the South Bay anadromous fishery such as water temperature, water taste and smell, as well as the sustained strength and timing of pulse flows.

When high percolation potential regions of main stem reaches of Coyote Creek and Guadalupe River would demand impractical amounts of release flows to wet channels sufficiently for fish migration then alternative management protocols might fall back on deep pool refugia and shaded channels of tributaries such as Los Gatos Creek, Penetencia Creek and, I would propose for Stevens Creek use of Permanente Creek diversion.

Consideration should be given, as of vital importance, to the extent and health of a riparian corridor's natural shaded gravel and riffle habitat, deep pool refugia, with retention of channel under cut bank and woody debris.

Channel drop structures, obstructions, and cement conduits need prioritization for modification or removal.

Imported water outfalls would also factor into impact analysis on water taste and smell and on flow regimen duplication of natural stream pulse attraction flow conditions that should be natural for anadromous species.
Treatment plant outfalls, whether from reverse osmosis process or of other design need assessment on these same conditions and issues.

Then my last concern is that the volume of release flows necessary to sustain a healthy anadromous fishery has been traditionally overstated. If peak fish migration periods are given supplementary nighttime stream flows, say between 11 pm and 5 am., in high profile, spawning streams such as Los Gatos, Penetencia and Guadalupe Creeks of 8 or 10 cfs then believe benefits to regions fishery would be impressive.

Thank you for consideration of these comments for your Draft FAHCE EIR.

Libby Lucas

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: GLORIA McCLAIN Date: 6/19/17

Address: 2828 MONTE CRESTA WAY

City, State, Zip: SAN JOSE CA

Contact Phone Number: 408-259-2588

Email: GMcinSJ@webtv.net

I would like to make the following comment(s):

RE the Guadalupe River: it is very channelized along Alistar (Tasman to Montague, right next to Alistar). Fast moving water make it very difficult for fish to swim upstream! They need places to stop and rest! Can't you please take this into consideration when you are planning your new project! Remember how amazed we were the first time a fish was seen in our rivers? Can't we do something to help them stay here?

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: RICHARD MSMURRAY Date: 6/19/2017

Address: 2440 Summit Rd

City, State, Zip: LOS GATOS CA 95033

Contact Phone Number: 408

Email: Richard@sccreeks.org

I would like to make the following comment(s):

The rule curves will result in extirpation of the steelhead in extreme drought unless you have "extreme drought groundwater pumping" to keep the steelhead alive during such periods while recapturing the flow downstream for percolation into the groundwater

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: RICHARD MCMURTRY Date: 6/19

Address: 24010 Summit Road

City, State, Zip: Los Gatos, CA 95033

Contact Phone Number: 408 402-4932

Email: RICHARD@SCCREEKS.ORG

I would like to make the following comment(s):

1. ~~The EIR should~~ In addition to comparing existing conditions with post project conditions, the EIR should clarify the historical conditions with respect to flow, temperature, and evidence of salmonids or suitability of habitat to sustain salmonids in the creeks ~~below~~ upstream of the Dams. Eg. Cow Creek, San Felipe Creek, Alamitos Creek, Los Gatos Creek, Stevens Creek. Request data from Jeffrey Collogi, Ryan Phillips
2. Include fishermen data as anecdotal but indicative of migratory fish
3. ~~The EIR~~ In addition to comparison of existing conditions to post project conditions, the EIR should also evaluate post project conditions capacity to create a healthy sustainable population of steelhead and evaluate alternative ~~groundwater~~ means of achieving such conditions such as groundwater pumping during drought years with recapture into percolation ponds.

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Fish and Aquatic Habitat Collaborative Effort (FAHCE)

Fish Habitat Restoration Plan Environmental Impact Report (EIR)

COMMENT FORM

Name: Mackenzie Mossing Date: 6/19/17

Address: _____

City, State, Zip: _____

Contact Phone Number: _____

Email: mackenziescvrasc@gmail.com

I would like to make the following comment(s):

Please analyze any associations between this project and the flooding potential that was realized this winter (2017). Please also analyze any impacts from the proposed America center project in San Jose.

Please note: Public scoping comments will be accepted through Friday, June 30, 2017 at 5:00pm.
Please mail comments to the attention of Sarah Young at: SCVWD, 5700 Almaden Expressway, San Jose, CA 95118
or email comments to: *Scoping4FAHCE@valleywater.org*

Susana Rodriguez

From: D. Muirhead <doug.muirhead@stanfordalumni.org>
Sent: Thursday, June 29, 2017 1:40 PM
To: Scoping4FAHCE
Subject: comments for Fish Habitat Restoration Plan EIR Scoping et al

Ms. Sarah Young,

I attended the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) Fish Habitat Restoration Plan EIR Scoping on June 19, 2017 at District Headquarters.

I expect that many of my comments which follow will not be directly relevant to the EIR scoping process. I do hope they will be forwarded to the project team for consideration in future presentations to the Board and Committees and for educational materials for the public.
I have not attended and know nothing about the FAHCE Ad Hoc Committee.
You generally do not provide a list of historical references in Board reports, and so I was unaware of the Work Study Session on 06/14/11 which would have answered some of my questions. And anyone who claims to be interested in this topic should have read the Settlement Agreement.

1) I mentioned to multiple staff members how helpful I found the posters
at the various stations and suggested that these should have been included
in the multiple status presentations over the last two years.
Slide 1: PROJECT AREA
Slide 2: Three Creeks Points of Diversion/Water Rights
Slide 3: PROPOSED RULE CURVES AND WATER OPERATIONS
Slide 4: FISH & AQUATIC HABITAT
Slide 5: EXAMPLE OF REACHES OF INTEREST Stevens Creek
Slide 6: ADDITIONAL STEVENS CREEK HABITAT RESTORATION MEASURES
Slide 7: ADDITIONAL COYOTE CREEK HABITAT RESTORATION MEASURES
Slide 8: ADDITIONAL GUADALUPE RIVER HABITAT RESTORATION MEASURES
The posters have been added to the FAHCE web site
http://www.valleywater.org/FAHCE/

2) Several other dates of interest which do not appear on the FAHCE page:
a) workshop on July 12, 2016 to discuss the Water Rights Change Petition
applications
b) staff hosted a field trip on September 8, 2016 of the District's
raw water operation facilities along Coyote Creek and the Alamitos
Drop Structure

3) Over the last several years we have been told of the need to prepare
petitions to the State Water Resources Control Board (SWRCB) for changes
in water rights held by the District. The District submitted fifteen
water right change petitions on May 1, 2015 to the SWRCB.
Exhibit A to the Settlement Agreement lists 15 SCVWD Licenses and Permits
in the Three Creeks.
I asked staff why you needed to amend your licenses. The response was
that your beneficial uses are in the form of an enumerated list, and
to use your water for the new use of fish habitat requires license

modification.

4) Your plan proposes programmatic actions to improve habitat conditions.
Appendix B to the Settlement Agreement lists Proposed Measures, Studies, and Adaptive Management. Several posters at the Scoping mentioned the Geomorphic Functions Study. Staff indicated that many of the studies identified in the Settlement Agreement are complete. I would like to see status and the location of the document if complete for:

- Fish Habitat Restoration Plan
- Geomorphic Functions Plan
- ARWT Feasibility Study
- Trap & Truck Feasibility Study
- Alamitos Creek Feasibility Study
- Coyote Valley Feasibility Study
- Multi-Port Feasibility Study
- Cherry Flat Reservoir Operations Plan
- Coyote Percolation Facility Operations Plan

You also have a list of restoration measures deemed complete by District staff as Attachment 4: (DSA Provision 6.4, 6.5, 6.6) presented to the Board on 12/13/2016.

5) Your plan proposes modifications to District reservoir operations to meet the dual objectives of the District operational activities needed for water supply objectives and the requirements of the Endangered Species Act.
Over the last several years we have heard the terms "reservoir operations" and "rule curves" without definition. "rule curves" are specific flow and temperature parameters needed to support coldwater fisheries.
The 2011 Work Study said that you must demonstrate that water supply facilities can be operated to provide flow quantities at sufficient levels, and suitable temperatures to support the life cycle of certain fish species.
Based on the Scoping station on reservoir operations (and Appendix B to the Settlement Agreement), Flow Measures are for:

- Summer Rearing Flows
- Winter Base Flows
- Pulse Passage Flows
- Ramping Rates

These are discussed in detail in Appendix E to the Settlement Agreement.

a) In the Coyote Creek Watershed, imported water temporarily stored in Anderson Reservoir will not be included in volume calculations for habitat management programs. But does this "in-transit" water's added reservoir depth contribute to the temperature level of the coldwater pool?

b) Attraction flows, flow ramping, and pulse flows
There have been articles appearing in the California Water Blog on studies which endorse pulse flows as being superior to continuous flows both for improving stream habitats and discouraging invasive species.

6) Ogier Ponds
On a parallel track, the Safe Clean Water Program provides funding for wildlife habitat restoration and fish habitat and passage improvements

projects that support the management objectives of the Settlement Agreement.
These efforts include:
A partnership with County of Santa Clara to conduct a feasibility study for separating Ogier Ponds from Coyote Creek (awarded in March 2016, to be completed in Spring 2017).

This reminds me of two issues:

a) Additional water sources

Your plans address your water and your reservoirs. The GCRCD chair mentioned additional downstream water sources such as industrial de-watering. He also commented that he has seen fish swimming in the storm drains of San Jose.

b) Ogier Pond water rights

The Project Objectives in the Consultant Contract of September 23, 2016 are:

A. Evaluate the potential to use the Site for managed recharge
B. Determine the volume of surface water necessary to keep the ponds at a minimum water level.

While the County Parks Report Back on Ogier Ponds on May 4, 2016 mentions that a study of the separation of Metcalf Ponds from Coyote Creek is a commitment of FAHCE and the resolution of a water rights complaint , it is not clear how the "water budget" (available water for creek, percolation, run-off, etc) for Ogier ponds is to be funded.

7) Guadalupe-Coyote Resource Conservation District Joint meeting

I don't remember if it was a GCRCD board member, their consulting biologist, or a public commenter who asked if we would not be better off by having one complete unimpeded stream rather than having removed only some of the barriers in each of the creeks.

Thank you for listening to my rambling.
Doug Muirhead, Morgan Hill

Susana Rodriguez

From: Katja Irvin <katja.irvin@sbcglobal.net>
Sent: Friday, June 30, 2017 2:46 PM
To: Scoping4FAHCE
Cc: Sarah Young; 'Mike Ferreira'; Board of Directors; Clerk of the Board; 'James Eggers'; 'Barbara Kelsey'
Subject: FAHCE Scoping Comments from Sierra Club
Attachments: SCVWD FAHCE NOP Comments 6-30-17 Sierra Club.pdf; SCVWD FAHCE NOP Letter 6-30-17 Sierra Club.pdf

Dear Ms. Young,

From its inception the Sierra Club has considered the protection of the natural environment to be a major policy priority and it is in that vein that the Club's Loma Prieta Chapter - on behalf of our 18,000 members in the counties of Santa Clara, San Benito and San Mateo - offers the attached comments in response
to the Notice of Preparation for a Draft Environmental Impact Report for the FAHCE Program and Fish Habitat Restoration Plan.

We believe the Santa Clara Valley Water District should show excitement and energy towards bringing more wildlife back to our creeks. Regular progress should be communicated to stakeholders and the public. Then we can have fish cams to add to the falcon cam and beaver cam success stories in Santa Clara County.

We appreciate the opportunity to comment on this Project.

Respectfully Submitted,

Katja Irvin, AICP
Chair, Water Committee
Sierra Club Loma Prieta Chapter

SIERRA CLUB
LOMA PRIETA

Sierra Club Loma Prieta Chapter
Serving San Mateo, Santa Clara and San Benito Counties
Protecting Our Planet Since 1933

3921 East Bayshore Road, Suite 204
Palo Alto, CA 94303

Notice of Preparation of a Draft Environmental Impact Report, Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Sierra Club Loma Prieta Chapter Comments

June 30, 2017

From its inception the Sierra Club has considered the protection of the natural environment to be a major policy priority and it is in that vein that the Club's Loma Prieta Chapter - on behalf of our 18,000 members in the counties of Santa Clara, San Benito and San Mateo - offers the following comments regarding the Overall Environmental Impact Report (EIR) Comments

1. This appears to be a program EIR so individual projects will need additional environmental clearance. Please clarify this and explain further clearance needed in the EIR so that the District and other agencies understand that subsequent EIR's and documents will be tiered off the Program EIR.

2. We suggest the baseline for environmental review of impacts and development of mitigation should be current SCVWD operations and physical conditions at the time of NOP release.

3. We suggest that the District utilize the *Coastal Multispecies Final Recovery Plan: Central California Coast Steelhead DPS* as published by the National Marine Fisheries Service (NMFS) as the baseline for impacts to Steelhead within this EIR. Specifically, the District's fish restoration plan should use the recovery actions specified in the NMFS plan for Central California Coast steelhead for each of the three FAHCE watersheds.

4. Explain within the EIR fisheries data collected over the last 20 years and what kind of comprehensive data the District did or did not collect.

5. In the absence of technical certainty, the EIR should identify potential impacts that could be associated with the implementation of the Project as potentially significant and unavoidable for the purpose of CEQA. With climate change (drought and reduced snowpack), historic overuse of water resources, and increasing population and there will be additional impacts on threatened species that need to be declared as unavoidable, or be mitigated.

Program Description

6. Include discussion that describes the threatened status of steelhead. Because of the declines in steelhead the federal government with the California Department of Fish and Wildlife concurred on the listing of coastal steelhead populations south of the Russian River under the Endangered Species Act as threatened species.

7. The Three Creeks Habitat Conservation Plan (HCP) developed by the District in 2014 was inconsistent with the FAHCE Settlement Agreement and cannot serve as the "project" for the purposes of the FAHCE EIR.

8. Include a description of the water rights proposed changes the District will be applying for as described in original FAHCE documents. Describe all existing water rights involved in the project on all three watersheds and existing permits utilized (State Water Board and SF Regional Water Quality Control Board), and any permits that would describe transport of imported water from San Luis Reservoir via pipeline and then diverting this water into Coyote Creek instead of using the historic Coyote Canal.

9. The project boundaries are bigger than the three watersheds. Describe the federal components of the water system which brings federal and state water through the Bureau of Reclamation facilities as leased by the District (San Luis Reservoir down to Coyote pump station) and the federal nexus to the project which then spills water via this federal conveyance system into the Coyote and other District Watersheds related to this Program.

10. As part of the Stevens Creek watershed, upper Permanente Creek must be discussed in the EIR, including potential for Steelhead habitat and as an alternative that could be more beneficial for threatened species.

Program Description – Flow Measures

11. We request development of a robust collaborative water flow modeling system with a multiyear data collection of fisheries per protocols accepted within the fisheries community to adequately analyze biological resources in relation to geology, hydrology, geomorphology, fisheries, and other environmental factors. This prudent investment would assist with environmental review and future permitting of FAHCE projects and should have been completed by now.

12. Please provide an easily understandable description of Reservoir Re-Operation Rule Curves with full documentation and mathematics (appendix) of the proposed rule curves and computer models utilized. Please describe any lack of data and the reliability of such models and outcomes. We understand these rule curves are mostly hypothetical with little testing behind them. We expect substantial documentation with repeatable results by District scientists and other fisheries biologists and water professionals.

Program Description – Habitat Improvement Measures

13. The description of habitat improvement measures must include a list of fish migration barrier removal projects and habitat improvement projects and their schedules. It is feasible to identify all of these projects even if it is not feasible to do full environmental review of each project.

    This list should include all the projects in the FAHCE Settlement Agreement including priority habitat and passage improvement projects identified since 2003, such as:
    a. Metcalf Ponds Stream Corridor Restoration on Coyote Creek
    b. Replacing the SCVWD water diversion dam located 2000 feet downstream from Almaden Lake with step pools and habitat improvements between Lake Almaden and the dam on Alamitos Creek, Guadalupe Creek, and Guadalupe River
    c. Lake Vasona temperature reductions project on Los Gatos Creek
    d. Permanente Diversion Canal fish passageway in the Stevens-Permanente watershed

14. The description should include a list of habitat measures completed prior to the (pre-NOP) CEQA baseline of this project, and a list of measures proposed with this Program.

15. Include Guidelines for Bank Stabilization as part of the program to be reviewed, as required in the FAHCE Settlement Agreement.

16. Water quality must be included in the habitat improvement measures needed to provide conditions for viable aquatic habitats. Issues with trash, hazardous waste, homeless persons, and urban runoff pollution must be addressed by the program and impacts analyzed and mitigations established.

Program Description – Biological Monitoring / Adaptive Management

17. Include a detailed description of activities outlined in the FAHCE Settlement Agreement including the requirement to add "range expansion" (trap and truck measures) in Phase II if the Phase I measures do not achieve the desired improvements in fish population.

Topics to be Analyzed – Biological Resources

18. Analyze impacts of flow and habitat improvement measures on other aquatic species, specifically the Western Pond Turtle and the Red-Legged Frog.

Topics to be Analyzed – Cumulative Impacts

19. Include all projects in any stage of feasibility or planning, including all flood control and bay levee improvement projects, as well as other water infrastructure and flow changes related to imported water.

Mitigation

20. Minimize the scouring impacts due to district operation of pipelines, percolation ponds and dam outlets with lack of flow metering capabilities. Describe what measures are being constructed currently in the Anderson Dam to counter this problem as well as all other dams being seismically retrofitted in the near future.

21. Describe how the District will control exotic species in the waterway, especially with any introduction due to imported water.

22. Please differentiate those measures that will not count towards mitigating this project (e.g. Funding of fish ladders already required under existing law for existing facilities, or any other general funding mechanism or program that is already funded and a part of another district program or project). Don't double count mitigation or programs that already exist relative to another District program, project or function.

23. Special Construction Techniques (BMP's). SFPUC and other districts and agencies around the State of California recognize that BMP's are not mitigation measures, but special construction techniques primarily used in storm-water and erosion control, water quality, etc. The Lotus V. Caltrans case made this clear. Also we understand that the District has never formally adopted any BMP's so it would they have no legal parlance at the District in terms of CEQA. We recognized BMP's originate more out of the federal process and clean water act and would expect to see them in construction specifications for fish barrier removals, and not in the EIR.

Alternatives

24. Include an alternative that analyzes fish ladders or equivalent fish passage measures and needed temperature mitigations for all dams including large Dams like Anderson and small dams such as the Vasona and Almaden lake dams.

25. Please consider working with experienced community stakeholders and the National Marine Fisheries Service to come up with more relevant and creative project alternatives.

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Protecting Our Planet Since 1933

3921 East Bayshore Road, Suite 204
Palo Alto, CA 94303

June 30, 2017

Ms. Sarah Young
Santa Clara Valley Water District
[By e-mail]

RE: Notice of Preparation of a Draft Environmental Impact Report, Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Dear Ms. Young,

From its inception the Sierra Club has considered the protection of the natural environment to be a major policy priority and it is in that vein that the Club's Loma Prieta Chapter - on behalf of our 18,000 members in the counties of Santa Clara, San Benito and San Mateo - offers the attached comments in response to the Notice of Preparation for a Draft Environmental Impact Report for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan.

The Loma Prieta Chapter believes there is no reason to delay planning and design for the necessary projects to restore adequate passage for Steelhead. Given the 14 years delay in the FAHCE process, it is our opinion that budgeting for FAHCE projects must increase substantially in the next 2 years to achieve the goals of the agreement.

Furthermore we believe the Santa Clara Valley Water District should show excitement and energy towards bringing more wildlife back to our creeks. Regular progress should be communicated to stakeholders and the public. Then we can have fish cams to add to the falcon cam and beaver cam success stories in Santa Clara County.

The Sierra Club appreciates the opportunity to comment on this Project and urges District staff and the Board of Directors to fully consider the points we have raised.

Respectfully Submitted,

Katja Irvin

Katja Irvin, AICP
Chair, Water Committee
Sierra Club Loma Prieta Chapter

Enclosures: 1

Cc: Santa Clara Valley Water District Board of Directors
Mike Ferreira, Sierra Club Loma Prieta Chapter Conservation Committee Chair
James Eggers, Sierra Club Loma Prieta Chapter Director
Barbara Kelsy, Sierra Club Loma Prieta Chapter Coordinator

Susana Rodriguez

From: Orange, Cherise <cherise.orange@PRK.SCCGOV.ORG>
Sent: Friday, June 30, 2017 3:16 PM
To: Scoping4FAHCE
Cc: Rocha, Don; Thomson, Annie; Rhoades, Michael
Subject: County of Santa Clara Department of Parks and Recreation Comment Memo to FAHCE SCVWD
Attachments: SCC PRD Response FAHCE SCVWD.pdf

To Whom It May Concern:

The County is supportive of efforts to improve stream habitat for endangered salmonid species in the County. However, a number of the enhancements identified in the original FAHCE were planned to occur on lands owned by the County and operated by the Parks Department. A number of regional parklands and Countywide Trails are within the Three Creeks Watershed.

Any enhancement efforts identified in the FAHCE Program and Fish Habitat Restoration Plan that either directly or indirectly impact County Park operated lands should be identified in the DEIR. The DEIR should additionally document that implementation of any enhancement that affects County lands or alignments identified in the Countywide Trails Master Plan will require the informed cooperation of various County agencies, a demonstrated compatibility with the County's mission to its citizens, and will require final approval by the County Board of Supervisors prior to initiation.

Attached is the official memorandum. Thank you for the opportunity to comment. If you have questions related to these comments, please call me at (408) 355-2228 or e-mail me at Cherise.Orange@prk.sccgov.org.

Thank you,

Cherise Orange

Cherise Orange, Associate Planner
"Learn from the people. Plan with the People. Begin with what they have. Build on what they know." – Lao Tzu Tao Te Ching

Santa Clara County Parks | 298 Garden Hill Drive | Los Gatos, CA 95032
408.355.2228 | parkhere.org



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County of Santa Clara

Parks and Recreation Department

298 Garden Hill Drive
Los Gatos, California 95032-7669
(408) 355-2200 FAX 355-2290
Reservations (408) 355-2201
www.parkhere.org

June 30, 2017

Ms. Sarah Young
Santa Clara Valley Water District (SCVWD)
5750 Almaden Expressway
San Jose, CA 95118-3614

SUBJECT: Notice of Public Scoping Meeting for the SCVWD Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

To Whom It May Concern:

In March 2015, the County of Santa Clara Parks and Recreation Department (County Parks) submitted a comment memorandum on the Notice of Preparation (NOP) for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Draft Environmental Impact Report (DEIR). That project proposed modifications to the SCVWD's reservoir operations and programmatic actions to improve, as appropriate, habitat conditions within the Three Creeks Watershed (Guadalupe River, Coyote Creek, and Stevens Creek). The comments within that memorandum stand. County Parks has recently received notice of a Public Scoping Meeting related to an additional Notice of Preparation for the FAHCE Program and Fish Habitat Restoration Plan. The following are our comments on this latest notice.

The County Parks Department is charged with providing, protecting, and preserving regional parklands for the enjoyment, education and inspiration of this and future generations. The Department is also charged with the planning and implementation of *The Santa Clara County Countywide Trails Master Plan Update (Countywide Trails Plan)*, an element of the Parks and Recreation Section of the County General Plan adopted by the Board of Supervisors on November 14, 1995.

The County is supportive of efforts to improve stream habitat for endangered salmonid species in the County. However, a number of the enhancements identified in the original FAHCE were planned to occur on lands owned by the County and operated by the Parks Department. A number of regional parklands and Countywide Trails are within the Three Creeks Watershed. They include but are not limited to:

- ***Anderson Lake County Park*** – with over four thousand acres, this County Park features the Coyote Creek Parkway multi use trails, the Jackson Ranch historic park site, and other day uses. With a unique combination of recreational resources, the park is a magnet for powerboat enthusiasts, bicyclists, equestrians, and nature lovers.

- ***Vasona County Park*** – this 152 acre park and connecting parkway provide users with a variety of

Board of Supervisors: Mike Wasserman, Cindy Chavez, Dave Cortese, Ken Yeager, S. Joseph Simitian

County Executive: Jeffrey V. Smith

activities from outdoor concerts to paddle boats and rowboats. The County Park Interpretive Staff and Youth Science Institute (YSI) located within the park provide multiple opportunities for users to learn and understand the natural beauty of Santa Clara County.

- ***Coyote Lake – Harvey Bear Ranch County Park*** – With over six thousand acres of open space, the County Park provides habitats for many species of birds, reptiles, amphibians, insects and mammals. The Park is home to Rare western pond turtle, California tiger salamander and Bay checkerspot butterfly.

- ***Los Gatos Creek Sub-Regional Trail (S4)***– from its confluence in San Jose at the Guadalupe/Santa Teresa trail, this trail extends upstream through the cities of Campbell and Los Gatos to the Bay Area Ridge Trail (R5-A) at Lexington Reservoir.

- ***Coyote Creek/ Llagas Creek Sub-Regional Trail (S5)***- this sub-regional trail extends from the Alameda County Line and the Bay Trail (R4) to the San Benito County Line and the Monterey-Yosemite Trail (R2).

- ***Stevens Creek Sub-Regional Trail (S2)*** – crossing the cities of Mountain View, Sunnyvale, Los Altos, and Cupertino this trail links with the San Francisco Bay Trail (R4) and Bay Area Ridge Trail (R5-A).

Any enhancement efforts identified in the FAHCE Program and Fish Habitat Restoration Plan that either directly or indirectly impact the above-named facilities, or any other County Park operated lands should be identified in the DEIR. The DEIR should additionally document that implementation of any enhancement that affects County lands or alignments identified in the Countywide Trails Master Plan will require the informed cooperation of various County agencies, a demonstrated compatibility with the County's mission to its citizens, and will require final approval by the County Board of Supervisors prior to initiation. For the success of the FAHCE Program and Fish Habitat Restoration Plan, it is imperative that SCVWD coordinate with the County of Santa Clara during planning, design, and implementation.

The DEIR should also consider and be consistent with the Department's Integrated Master Plan and Natural Resource Management Plan for Coyote Creek Parkway County Park; the Upper Stevens Creek County Park Resource Management Plan, and the Coyote Lake – Harvey Bear Ranch County Park Master Plan and Resource Management Plan. A copy of these documents are available for review at the Department website: www.parkhere.org.

The County Parks Planning Team is available as a resource regarding all County parklands and regional trails. Thank you for the opportunity to comment on the Notice of a Public Scoping Meeting for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan. If you have questions related to these comments, please call me at (408) 355-2228 or e-mail me at Cherise.Orange@prk.sccgov.org .

Sincerely,

Cherise Orange
Associate Planner

cc. Don Rocha, Deputy Director
Annie Thomson, Principal Planner
Michael Rhoades, Nature Resources Manager

Susana Rodriguez

From: Glendening, Susan@Waterboards <susan.glendening@waterboards.ca.gov>
Sent: Friday, June 30, 2017 3:20 PM
To: Tiffany Hernandez
Cc: Sarah Young; Ryan Heacock; Debra Caldon; Vincent Gin; Blinn, Brenda@Wildlife; Weightman, Craig@Wildlife; Molina, Mayra@Wildlife; Smoreno@gcrcd.org; jmerz@fishsciences.net; Holly.Kennedy@hdrinc.com; Gary Stern - NOAA Fisheries West Coast Region; Andy Trent; Julie Gantenbein; rrcollins@waterpowerlaw.com; Lichten, Keith@Waterboards; Fernandez, Xavier@Waterboards; state.clearinghouse@opr.ca.gov
Subject: San Francisco Regional Water Quality Control Board Comments on FAHCE NOP
Attachments: FAHCE Water Board NOP comment letter 06-30-17.pdf

Good afternoon Tiffany,

Attached please find attached the Water Board's comments on the FAHCE NOP.
If you have any questions about this please let me know.

Regards,
Susan

Susan Glendening
San Francisco Estuary Partnership/
San Francisco Regional Water Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
510.622.2462
Susan.Glendening@waterboards.ca.gov

Sent via electronic mail: no hard copy to follow

June 30, 2017

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Email: THernandez@valleywater.org

Subject: Comments on Notice of Preparation for Fisheries Aquatic Habitat Collaborative Effort and Fisheries Habitat Restoration Plan, Santa Clara County

Dear Ms. Hernandez:

The San Francisco Regional Water Quality Control Board (Water Board) staff appreciates the opportunity to provide comments on the Santa Clara Valley Water District's (District's) Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Fisheries Aquatic Habitat Collaborative Effort and Fish Habitat Restoration Plan (Project) (State Clearinghouse #2015022008) (Project). The District posted the NOP for public review on February 2, 2015, and opened the comment period a second time on June 1, 2017, without revising the NOP, but augmenting it with additional details provided at the scoping meeting on June 19, 2017. We consider both the published NOP of 2015 and the additional scoping meeting materials as the complete NOP.

The purpose of the Project is to implement the *Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creeks*[1] (Agreement) prepared by the State Water Resources Control Board[2] (State Board) (January 6, 2003). The Project includes changes in the District's reservoir operations through new reservoir rule curves, which will require the District to obtain authorization from the State Board through a water rights change petition. In addition, the Project includes habitat improvement measures, biological monitoring, and adaptive management. Together, these measures and actions are referred to as the Fisheries Aquatic Habitat Collaborative Effort (FAHCE) program. The overall management objectives of FAHCE are to restore and maintain healthy steelhead trout (*Oncorhynchos mykiss*) and chinook salmon (*Oncorhynchus tshawytscha*) populations as appropriate to each of the three creeks, by

[1] The initialing parties to the Agreement are the District, the Guadalupe-Coyote Resource Conservation District (GCRCD), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), Trout Unlimited, the Pacific Coast Federation of Fishermen's Associations, and California Trout, Inc.

[2] Agreement Reference: SB 320572 v1:007677.0001 01/06/2003

providing: (a) suitable spawning and rearing habitat within each watershed and (b) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles (NOP pg. 2; Agreement, Condition 6.2.2).

The Project has the potential for actions that will require the Water Board's approval under the federal Clean Water Act, the California Water Code, and the San Francisco Bay Basin Water Quality Control Plan (Basin Plan) for discharges of dredge and fill material. The Basin Plan includes the California Wetlands Conservation Policy, which requires no net loss and a long term net gain in the extent, functions, and values of wetlands, including riparian wetlands. Accordingly, the Water Board is a Responsible Agency under CEQA. We offer the following comments to guide the District in completing the Project EIR, and to highlight the Water Board's concerns.

Comments

1. We appreciated the opportunity to talk one-on-one with the District staff and consultants that hosted each poster table at the NOP scoping meeting. We understand the meeting format was structured this way to provide the public a low-key setting that might be perceived as being less intimidating than a traditional meeting format. However, given the large scale, scope, and importance of the FAHCE program, we would have appreciated hearing a presentation by the District, as well as an opportunity to participate in a group question/answer (Q&A) session with the District and other meeting attendees. For future projects we recommend the District deliver a presentation, allow for group Q&A and discussion, and then follow up with one-on-one meeting and discussion opportunities.

2. The EIR should fully describe the actions and projects that will be implemented and a schedule for their implementation under the FAHCE program. The NOP *Project Overview* poster lists the Agreement and the "Fish Habitat Restoration Plan: Stevens Creek, Coyote Creek, and Guadalupe River" (Restoration Plan) as elements to be analyzed in the EIR. The Restoration Plan will have nine sections, including "Phase 1 Measures," even though the Agreement has four phases. Please include a description of the "Phase 1" measures in the EIR, how Phase 1 relates to the four phases in the Agreement, and how any required CEQA review will be completed for the remaining phases and/or restoration plan sections. In addition, to adequately address cumulative impacts in the EIR, the District should include an analysis of cumulative impacts from the four phases, and explain whether the District considered a programmatic EIR for the Project.

   The June 2017 scoping meeting materials showed that some facility improvements have already been completed under the FACHE program. The *Completed Measures* poster shows the "Stevens Creek Corridor Improvements," the "Hillsdale Avenue Bridge Improvements on Guadalupe River," and the "Penitencia Creek Unscreened Mabury-Noble Avenue" projects have been completed. If there are other measures completed other than those mentioned here, please include them in the Project description. In addition, we are concerned that these completed measures were implemented without the benefit of the FAHCE Fisheries Habitat Restoration Plan and associated management objectives. In the EIR's Project description, please clarify how these completed projects are consistent with the Project, and include them in the analysis of cumulative impacts.

3. To describe the baseline conditions, please work with the initialing parties to identify the appropriate data sources and analytical methods for filling in data gaps to describe steelhead and Chinook populations, flow conditions, suitable habitat for spawning and rearing, and how the Project will improve upon the baseline conditions to meet the overall management objectives by providing steelhead trout and chinook salmon populations with (a) suitable spawning and rearing habitat within each watershed, and (b) adequate passage for adults to reach suitable spawning and rearing habitat and juveniles to out-migrate.

4. The Project EIR's cumulative impact analysis should address capital projects being planned within the three creeks' watersheds, which include (but are not limited to): the Upper Guadalupe River flood control project; the Mid-Coyote Creek flood control project; Anderson Dam seismic upgrades; and Almaden Dam seismic upgrades.

5. Due to the overall management objectives (stated in paragraph two, and addressed in more detail in Comment 6), the Project is inherently beneficial. However, the NOP (p.4) states that the Water Board "…may rely on the D[raft] EIR to evaluate their decisions as Responsible [A]gencies under CEQA… for implementation actions associated with the proposed program."

   For such actions and/or projects in FAHCE implementation, both a Clean Water Act (CWA) Section 401 water quality certification and a CWA Section 404 Permit from the U.S. Army Corps of Engineers may be necessary for projects involving impacts to waters of the U.S. Additionally, the project proponent may need to file a Report of Waste Discharge if the project may result in a discharge of waste to waters of the State, even if such waters have been excluded from federal jurisdiction (e.g., as isolated waters under the Supreme Court's SWANCC and Rapanos decisions[3]). Work involving stream channels may require a Streambed Alteration Agreement from the California Department of Fish and Wildlife.

   Please note that the Water Board has incorporated U.S. EPA's Clean Water Act Section 404(b)(1) "Guidelines for Specification of Disposal Sites for Dredge or Fill Material," dated December 24, 1980, into the Basin Plan for determining the circumstance under which filling of wetlands, streams, or other waters of the State may be permitted. Section 404(b)(1) Guidelines prohibit all discharges of fill material into regulated waters of the United States, unless the discharge, as proposed, constitutes the least environmentally damaging practicable alternative (LEDPA) that will achieve the basic project purpose. Water Board staff recommends the District consider and review in the EIR alternatives that would meet the LEDPA standard to expedite any future Water Board review.

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[3] Both the SWANCC and Rapanos decisions interpret a provision under the Clean Water Act to define "waters of the U.S." The SWANCC decision (i.e., Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001)) resulted in "isolated waters" being removed from the federal definition of "waters of the U.S." California still considers such waters, including tributaries that flow intermittently, as waters of the State subject to protection under the Porter-Cologne Act. The Rapanos decision (i.e., Rapanos et ux., et al. and Carabell, et al. vs. United States; U.S. Supreme Court Nos. 04–1034 and 04-1384. Argued February 21, 2006—Decided June 19, 2006) resulted in the federal definition for waters of the U.S. requiring a significant nexus to a "navigable water" as defined by the Clean Water Act, resulting in certain wetlands and surface waters to be excluded as "waters of the U.S." However, California still considers such wetlands and waters as waters of the State subject to protection under the Porter-Cologne Act.

The Guidelines sequence the order in which proposals should be approached: 1) Avoid - avoid impacts to waters; 2) Minimize - modify project to minimize impacts to waters; and, 3) Compensate – once impacts have been fully minimized, compensate for unavoidable impacts to waters. When it is not possible to avoid impacts to water bodies, measures to minimize the impacts must be implemented. Compensation for lost water body acreage and functions through restoration or creation will only be considered after impacts have been minimized. Where impacts cannot be avoided, the creation of adequate mitigation habitat to compensate for the loss of water body acreage, functions, and values must be provided.

Indirect and cumulative impacts to wetlands must also be prevented. Indirect impacts include, but are not limited to: deposition of sediments; erosion of substratum; additional water (flooding); reduced water supply or flows; creating a condition of pollution; and watershed degradation. The EIR should describe the potential for such impacts and associated compensatory mitigation if such impacts are unavoidable.

6. The NOP states the Project includes implementation of reservoir rule curves, which were developed at least 14 years ago (i.e., before 2003, when the Agreement was signed). We are concerned that the reservoir rule curves may be outdated with respect to current, more-nuanced, computer modeling capabilities for hydrology, hydraulics, geomorphology, and biological resources in the three creeks. In particular, we urge the District to ensure the EIR appropriately evaluates "Scenario 4" recently developed by the FAHCE technical working group, which includes the initialing parties and their consultants. That recent work may have the potential to achieve necessary flows for fish while reducing the volume of releases required to obtain those flows, thus also conserving water—a win-win scenario. Including Scenario 4 in the EIR analysis would be consistent with the Agreement, Condition 4.1.3, which states: "The Parties may modify the Agreement if the record demonstrates that another alternative will better protect and maintain such beneficial uses." In addition, the other FAHCE initialing parties should be involved with the District in determining the suitability of the reservoir rule curves based on current modeling methods, and identifying better methods for meeting the overall management objectives, consistent with the Agreement, Condition 4.1.3.

7. For the Fisheries Habitat Conservation Plan, we recommend the District collaborate with the other initialing parties to develop and implement a watershed-scale monitoring program that adequately captures population data for in-migrating adults, out-migrating juveniles, and spawning and rearing in the Coyote, Stevens, and Guadalupe watersheds. Monitoring should be consistent with the California Conservation Monitoring Program[4] (to the extent its methods and procedures are applicable to the San Francisco Bay Area coastal waters and creeks), and/or comparable protocols subject to approval by the initialing parties. This would allow for unbiased, long-term population monitoring with statistically significant results that may be ascribed to the FAHCE implementation measures, and would remove confounding factors that are not within the District's control (such as episodic climate change impact).

[4] Adams, Peter B., et al, 2011. California Coastal Salmonid Population Monitoring: Strategy, Design, and Methods. Fish Bulletin 180. California Natural Resources Agency and California Department of Fish and Wildlife. Sacramento.

8. The NOP scoping meeting materials include individual posters of each of the three creeks, and they indicate a Geomorphic Study will be completed for each creek. Please clarify in the EIR how these studies will be used to inform the Project alternatives and implementation of Project measures and actions under FAHCE. We recommend the Geomorphic Study for each watershed incorporate knowledge about both the creek corridors and contributing factors in their catchments that have the potential to affect the creeks' beneficial uses. For example, they should recognize and evaluate potential impacts and opportunities associated with the District's One Water effort; water operations by the District and private parties like Cal Water and the San Jose Water Company; ongoing storm drain master planning efforts, such as San Jose's; the development and implementation of storm water resource plans and green infrastructure plans by NPDES municipal stormwater permittees; and funding opportunities for stream restoration and beneficial upland work, such as greenhouse gas and Prop 1 green infrastructure grants. While a number of these efforts are ongoing, the Geomorphic Studies could also be used to inform future decisions in a way that would improve creek functions, and to avoid decisions that may result in unintended adverse impacts.

9. The *Coyote Creek* poster stated that a Coyote Creek Facilities Plan will be prepared. Please clarify in the EIR how the plan will be implemented and how the plan will inform any other measures, actions, and projects in the Coyote Creek watershed under FAHCE.

10. The *Coyote Creek* poster also included the "Best Effort to develop Cherry Flat Reservoir Operations Agreement with the City of San Jose" measure. For this effort, please describe in the EIR the role that Cherry Flat Reservoir may play in achieving the overall management objectives, and identify the steps the District will take to work with the City of San Jose.

11. In contrast to the posters for Coyote Creek and the Geomorphic Study for all three creeks, the *Guadalupe River* poster states "Prepare *and Implement* an Alamitos Creek Facilities Plan" (emphasis added in italics). This highlights our question of whether the Project includes development of certain plans, but would not entail implementation of such plans; or was it an oversight to not mention "and implementation" in reference to those other studies and plans?

    Regarding the Alamitos Creek Facilities Plan, specifically, please specify in the EIR how the plan will implement the overall management objectives. We encourage the District to develop and implement a plan option that would remove the drop structure at Alamitos Creek. This has the potential to significantly improve water quality and rearing habitat in Alamitos Creek from its confluence at Guadalupe Creek to at least 1 mile upstream due to improvements in temperature and flow.

Finally, we recognize that the District has been working intensively over the past two years with the other initialing parties to develop the technical work necessary for the draft EIR. This includes building the computer model to develop alternatives for implementation of the reservoir rule curves, and other aspects of work to develop a Fisheries Habitat Restoration Plan. As mentioned previously, we recommend the District continue to collaborate with the initialing parties to further define the computer modeling necessary to meet the

requirements of the Agreement and the overall management objective to improve salmonid spawning and rearing habitat, monitoring salmonid populations, and adaptive management in the Coyote Creek, Guadalupe River, and Stevens Creek watersheds.

We welcome the opportunity to provide additional comments on a draft Project EIR when it is available for review. If you have any questions about our comments please contact me via email to klichten@waterboards.ca.gov or at (510) 622-2380 or Susan Glendening of my staff at susan.glenending@waterboards.ca.gov or (510) 622-2462.

Sincerely,

Keith H. Lichten, Chief
Watershed Management Division

Cc: SCVWD:
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Susana Rodriguez

From: Julie Gantenbein <jgantenbein@waterpowerlaw.com>
Sent: Friday, June 30, 2017 3:28 PM
To: Scoping4FAHCE
Cc: WaterPowerLawOffice; Sarah Young; smoreno@gcrcd.org
Subject: Fwd: Comments
Attachments: image001.gif; ATT00001.htm; image002.png; ATT00002.htm; Response to FAHCE NOP with Attachment.6.30.17.pdf; ATT00003.htm

Sarah:

Here are our comments again. Please confirm receipt. Thank you! Julie

Begin forwarded message:

From: WaterPowerLawOffice <office@waterpowerlaw.com>
Date: June 30, 2017 at 11:52:49 AM PDT
To: "syoung@valleywater.org" <syoung@valleywater.org>
Cc: Debra Caldon <DCaldon@valleywater.org>, Jim Fiedler <JFiedler@valleywater.org>, Ryan Heacock <RHeacock@valleywater.org>, Tiffany Hernandez <thernandez@valleywater.org>, Jae Abel <JAbel@valleywater.org>, Leslie Layng <LLayng@valleywater.org>, James O'Brien <JOBrien@valleywater.org>, John Pfister <JPfister@valleywater.org>, Anthony Fulcher <AFulcher@valleywater.org>, Lisa Porcella <lporcella@valleywater.org>, Joe Chavez <JChavez@valleywater.org>, Clayton Leal <cleal@valleywater.org>, Garth Hall <ghall@valleywater.org>, Jason Nishijima <JNishijima@valleywater.org>, Melissa Moore <mmoore@valleywater.org>, Eric Olson <EOlson@valleywater.org>, Doug Titus <DTitus@valleywater.org>, Vincent Gin <VGin@valleywater.org>, Kurt Arends <Karends@valleywater.org>, Victor Gutierrez <VGutierrez@valleywater.org>, Lonnie Spin <LSpin@valleywater.org>, "NMetcalf@hansonbridgett.com" <NMetcalf@hansonbridgett.com>, Richard Roos-Collins <rrcollins@waterpowerlaw.com>, Julie Gantenbein <jgantenbein@waterpowerlaw.com>, Nicholas Niiro <nniiro@waterpowerlaw.com>, "mclifford@tu.org" <mclifford@tu.org>, "Alecia.Vanatta@noaa.gov" <Alecia.Vanatta@noaa.gov>, "gary.stern@noaa.gov" <gary.stern@noaa.gov>, "David.Hines@wildlife.ca.gov" <David.Hines@wildlife.ca.gov>, "tami.schane@wildlife.ca.gov" <tami.schane@wildlife.ca.gov>, "brenda.blinn@wildlife.ca.gov" <brenda.blinn@wildlife.ca.gov>, "michelle.leicester@wildlife.ca.gov" <michelle.leicester@wildlife.ca.gov>, "David.Johnston@wildlife.ca.gov" <David.Johnston@wildlife.ca.gov>, "corinne.gray@wildlife.ca.gov" <corinne.gray@wildlife.ca.gov>, "Craig.Weightman@wildlife.ca.gov" <Craig.Weightman@wildlife.ca.gov>, "Scott.Wilson@wildlife.ca.gov" <Scott.Wilson@wildlife.ca.gov>, "Mayra.molina@wildlife.ca.gov" <Mayra.molina@wildlife.ca.gov>, "Kevin.Takei@wildlife.ca.gov" <Kevin.Takei@wildlife.ca.gov>, "George.Neillands@wildlife.ca.gov" <George.Neillands@wildlife.ca.gov>, "Sean.Cochran@wildlife.ca.gov" <Sean.Cochran@wildlife.ca.gov>, "KLichten@waterboards.ca.gov" <KLichten@waterboards.ca.gov>, "sglendening@waterboards.ca.gov" <sglendening@waterboards.ca.gov>, "Valiela.Luisa@epamail.epa.gov" <Valiela.Luisa@epamail.epa.gov>, "Justine.Herrig@waterboards.ca.gov" <Justine.Herrig@waterboards.ca.gov>, "Matthew.McCarthy@waterboards.ca.gov" <Matthew.McCarthy@waterboards.ca.gov>, "mondy@sccreeks.org" <mondy@sccreeks.org>, "smoreno@gcrcd.org" <smoreno@gcrcd.org>, "RCastillo@gcrcd.org" <RCastillo@gcrcd.org>, "Christopher.Kifer@NOAA.gov" <Christopher.Kifer@NOAA.gov>, "nathaniel.butler@noaa.gov" <nathaniel.butler@noaa.gov>, "junkob@acterra.org" <junkob@acterra.org>, "alice@greenfoothills.org"

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Subject: Comments

Ms. Young:

Attached please find GCRCD, California Trout, and PCFFA's response to the FAHCE NOP.

Please let me know if you have any questions.

Best,

Tiffany Poovaiah
Paralegal/Firm Administrator

WATER AND POWER
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2140 SHATTUCK AVENUE, STE. 801
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June 30, 2017

Via electronic mail

Ms. Sarah Young
Senior Project Manager
Santa Clara Valley Water District
Scoping4FAHCE@valleywater.org

Re: Fish and Aquatic Habitat Collaborative Effort (FAHCE) Program and Fish Habitat Restoration Plan

Dear Ms. Young:

The Guadalupe-Coyote Resource Conservation District (GCRCD), California Trout, and Pacific Coast Federation of Fishermen's Associations (PCFFA) submit these comments in response to the Santa Clara Valley Water District's (SCVWD) Notice of Public Scoping for the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Environmental Impact Report (EIR) dated June 1, 2017 (Scoping Notice). These comments supplement our previous scoping comments filed on March 16, 2015 in response to the SCVWD's first Notice of Preparation (NOP) of a Draft EIR for the FAHCE Program and Fish Habitat Restoration Plan (FHRP). We provide our initial scoping comments as Attachment 1 for ease of reference.

According to the Scoping Notice, the SCVWD is "preparing an [EIR] in support of the FAHCE Fish Habitat Restoration Plan for the Three Creeks watersheds … for which the District holds water rights licenses." We understand that the EIR will also be used to support the State Water Resources Control Board's (SWRCB) decision on the Change Petitions the SCVWD filed in May 2015. The Change Petitions propose changes to conform the SCVWD's water rights to the FHRP, as well as other changes outside of the FHRP to conform the water rights to actual operations. We offer the following comments to assist the SCVWD in preparing an EIR that is sufficient for purposes of both the SCVWD's and SWRCB's decisions.

A. The EIR's Findings Regarding Effects of Future Measures Must Be Supported by Substantial Evidence.

The California Environmental Quality Act (CEQA) requires that an EIR articulate reasons and provide substantial evidence to support findings regarding a project's potential

effects.[1] As lead agency, the SCVWD must present substantial evidence in support of any finding that the proposed action will have a less than significant impact on the environment. It is not the public's burden to show that the action will have a significant effect.

We understand that the SCVWD is proposing to prepare a programmatic EIR with respect to non-flow measures, and that the SCVWD will prepare additional CEQA documents as appropriate once specific projects are developed. We support that general approach. However, to the extent the SCVWD intends to rely on future measures to support findings of insignificant impact, those measures must be described in the EIR with some specificity. If mitigation measures, including plans for adaptive management, are presented in vague terms (e.g., best efforts will be made, best practices will be used, measures to be undertaken when feasible), there may be insufficient basis to support a finding that a potential impact will be insignificant.

Given that the SCVWD intends for the EIR to satisfy the SWRCB's CEQA obligations as well, the EIR should provide substantial evidence in support of its analysis of the potential effects of the SWRCB's action on the Change Petitions.

B. <u>The EIR Must Include a Clear Statement of Objectives</u>.

As we stated in our initial scoping comments, the project description in the EIR must include a "statement of the objectives sought by the proposed project."[2] "The statement of objectives should include the underlying purpose of the project, and it should be clearly written to guide the selection of alternatives to be evaluated in the EIR."[3] A lead agency should not give a project's purpose an artificially narrow definition that would preclude consideration of a reasonable range of alternatives.[4]

The NOP issued by the SCVWD in February 2015 stated that the purpose of the FHRP was to "restore and maintain healthy steelhead trout and salmon populations as appropriate to each of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles."[5] We continue to support this

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[1] "We apply the substantial evidence test to conclusions, findings, and determinations, and to challenges to the scope of an EIR's analysis of a topic, the methodology used for studying an impact, and the reliability or accuracy of the data upon which the EIR relied because these types of challenges involve factual questions." *City of Long Beach v. Los Angeles Unified Sch. Dist.*, 176 Cal. App. 4th 889, 898 (2009); *see also Laurel Heights Improvement Assn. v. Regents of Univ. of California*, 47 Cal. 3d 376, 392 (1988), *as modified on denial of reh'g* (Jan. 26, 1989); 14 Cal. Code Regulations § 15091(b).

[2] 14 Cal. Code of Regulations §15124(b).

[3] Stephen L. Kostka and Michael H. Zischke, *Practice under the California Environmental Quality Act* § 12.13 (2011 2d ed.).

[4] *In re Bay-Delta Programmatic Envtl. Impact Report Coordinated Proceedings*, 43 Cal. 4th 1143, 1166 (2008).

[5] NOP, p. 2.

purpose statement. It is consistent with the FAHCE Settlement Agreement, and allows for identification and consideration of a reasonable range of feasible alternatives that would achieve the project objectives.

C. The EIR Must Evaluate a Reasonable Range of Alternatives that Would Avoid or Lessen Environmental Impacts.

Under the CEQA Guidelines, an EIR must evaluate "a range of reasonable alternatives to the project … which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." [6] The EIR's discussion of alternatives must include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project."[7]

According to the NOP, the SCVWD is proposing to prepare a programmatic EIR with respect to non-flow measures to improve habitat conditions in the Three Creeks area, and "specific habitat improvement projects will be evaluated in subsequent documents tiered to this DEIR."[8] However, the EIR will evaluate specific flow measures, i.e., reservoir rule curves.

The obligation to consider a reasonable range of alternatives applies to programmatic EIRs.[9] Thus, the SCVWD must consider alternatives to the proposed conservation program.

The SCVWD also must consider a range of reasonable alternatives to the proposed FAHCE rule curves that potentially would avoid or lessen the environmental impacts of the SCVWD's ongoing water supply facilities and operations. The Scoping Notice does not describe such alternatives. To assist with this element, we have identified a set of alternative reservoir rule curves that was developed using the best available information regarding the SCVWD's water supply operations and biological and habitat needs of salmon and steelhead. Our technical expert, in collaboration with the National Marine Fisheries Service and Department of Fish and Wildlife staff, estimated the minimum number of fish needed for self-sustaining populations, and then worked backward to calculate the reservoir releases that would provide suitable habitat and passage conditions for each freshwater lifestage on as many days as possible, while still maintaining adequate storage for water supply and other beneficial uses. We believe this flow

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6 14 Cal. Code Regulations § 15126.6(a); *see also id.*at § 15126.6(c).

7 14 Cal. Code Regulations §15126.6(d).

8 NOP, p. 3.

9 *See Foothill Conservancy v. East Bay Municipal Utility District*, Case No. 34-2010-80000491. The court in *Foothill Conservancy v. East Bay Municipal Utility District* found that the programmatic EIR prepared by the water district to support its approval of a long-term water supply plan was deficient. Although the EIR considered five alternatives to the preferred water supply program, the court found there was insufficient variation among the alternatives, and that the water district erred in not considering any alternatives that would mitigate the impacts of raising Pardee Reservoir.

alternative may achieve the stated objectives of the FHRP while avoiding or lessening the cumulative effects of the SCVWD's water supply and flood control operations on salmon and steelhead. We request that the SCVWD evaluate this flow alternative in the EIR, along with any other reasonable alternatives to achieve the project objectives, in accordance with CEQA and Section 4.1.3 of the FAHCE Settlement Agreement.[10]

CONCLUSION

We thank the SCVWD for considering these further scoping comments. We look forward to working with SCVWD staff to ensure the EIR is adequate to support the SCVWD's decision on the FHRP and the SWRCB's decision on the Change Petitions. We look forward to the completion of the regulatory permitting processes so we may begin implementation of the conservation program.

Respectfully submitted,



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Attorneys for GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT and CALIFORNIA TROUT,



Noah Oppenheim
Executive Director

[10] Section 4.1.3 provides, in part: "the Parties will support the adoption of license and permit amendments in substantial conformity with this Agreement … if the record continues to demonstrate that these measures are the best alternative to protect and maintain the beneficial uses of these waters and otherwise comply with applicable laws. The Parties may modify the Agreement if the record demonstrates that another alternative will better protect and maintain such beneficial uses."

PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS
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(415) 561-5080
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cc: FAHCE Initialing Parties

Attachment 1

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March 16, 2015

Via electronic mail

Tiffany Hernandez
Santa Clara Valley Water District
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San Jose, CA 95118
thernandez@valleywater.org

Re: Notice of Preparation of a Draft Environmental Impact Report for the Fish and Aquatic Habitat Collaborative Effort Program and Fish Habitat Restoration Plan

Dear Ms. Hernandez:

American Rivers, California Trout, Guadalupe Coyote Resource Conservation District ("GCRCD"), Santa Clara County Creeks Coalition ("SCCCC"), and Trout Unlimited submit these comments in response to the Santa Clara Valley Water District's ("District") Notice of Preparation ("NOP") of a Draft Environmental Impact Report ("DEIR") for the Fish and Aquatic Habitat Collaborative Effort ("FAHCE") Program and Fish Habitat Restoration Plan. We thank the District for the additional time to provide comments.

We have a long history with the FAHCE Program, collectively. The GCRCD filed the water rights complaint with the State Water Resources Control Board ("SWRCB") that led to the FAHCE settlement negotiations.[1] California Trout, the GCRCD, and Trout Unlimited initialed the FAHCE Settlement Agreement in 2003. American Rivers and the SCCCC subsequently joined these groups in their efforts to work with the District and other stakeholders to implement the FAHCE Settlement Agreement, and more specifically the Fisheries Habitat Restoration Plan. We continue to cooperate with the District in its efforts to obtain regulatory approvals necessary to implement the FAHCE Agreement.

In particular, we will participate in the technical workshop and scientific panel the District is convening on March 23, 2015. This workshop is intended to assist the parties to the FAHCE Agreement reach agreement on the technical methods and data that will be used to resolve the details of the Fisheries Habitat Restoration Plan. We thank the District for working to build stakeholder support for the FAHCE Program in advance of the matter being set for hearing before the SWRCB. It is our hope that collaboration now will avoid contested regulatory proceedings before the SWRCB and other jurisdictional resource agencies.

[1] That complaint is still before the SWRCB, but has been stayed as the District and initialers of the FAHCE Settlement Agreement work to implement that agreement.

Compliance with the California Environmental Quality Act ("CEQA") is a prerequisite to the SWRCB's amendment of the District's water rights and the California Department of Fish and Wildlife's issuance of related permits. Under CEQA, the EIR should be sufficient to provide the resource agencies and public with detailed information about the potential environmental effects (even though the project is intended to have beneficial environmental effects), identify appropriate mitigation for any negative effects, and identify feasible and reasonable alternatives to the proposed project. The following comments are intended to help the District achieve these purposes for the EIR.

1. The EIR Should Include a Complete and Accurate Project Description.

a. Description of Program Components

The EIR must include a complete and accurate description of the project in order to permit a thorough evaluation of the environmental impacts, mitigation measures, and alternatives.[2]

The NOP identifies three elements of the FAHCE Fish Habitat Restoration Plan: (1) Flow Measures; (2) Habitat Improvement Measures; and (3) Biological Monitoring/Adaptive Management.[3] The District's proposed Flow Measures are described as specific Reservoir Re-operation Rule Curves.[4] The other two elements of the plan are less well-defined, in part because the specific measures for these elements were not fully resolved by the FAHCE Settlement Agreement.

The EIR's description of the Habitat Improvement and Biological Monitoring/Adaptive Management elements should include additional specificity. For example, the Fish Habitat Restoration Plan should establish specific biological goals based on the FAHCE settlement goals of restoring the salmon and steelhead populations to a healthy condition. The FAHCE Settlement Agreement expressly provides that the Adaptive Management Program will include:

> Measurable objectives consistent with the Phase One, Two, and Three management objectives for the steelhead trout and salmon fisheries and their habitats in the watershed subject to the Agreement. . . . Measurable objectives will be developed for flow measures, including maintenance of suitable water temperatures for summer steelhead rearing, performance of fish passage facilities, and other non-flow measures.[5]

The plan should also consider the targets of the Steelhead Recovery Plan as one set of measureable objectives for the FAHCE goals.

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2 14 Cal. Code Regulations § 15124; *County of Inyo v. City of Los Angeles*, 71 Cal.App.3d 185, 192 (1977).
3 NOP, p. 3.
4 *Id.*
5 FAHCE Settlement Agreement § 7.3(A).

The Fish Habitat Restoration Plan should also include a schedule for implementation of the non-flow habitat improvement measures. While the parties to the FAHCE Settlement Agreement contemplated securing regulatory approvals and starting implementation within two years,[6] twelve years have now passed since the agreement was initialed. Given this considerable lapse of time, it is important that the Fish Habitat Restoration Plan include a specific implementation schedule, subject to adjustment based on factors that are not within the District's reasonable control.

We understand that the District will provide a more complete description of the Fish Habitat Restoration Plan in the EIR. We further understand that the specific measures proposed for the Habitat Improvement and Biological Monitoring/Adaptive Management elements will be informed in part by the technical workshop on March 23. We look forward to participating in the workshop and any subsequent meetings and reviewing the plan.

b. Description of Program Purpose

The project description in the EIR must include a "statement of the objectives sought by the proposed project."[7]

As stated by the NOP, the FAHCE Settlement Agreement "includes the development and implementation of a fisheries habitat restoration plan for North county streams with water supply reservoirs."[8] The purpose of the Fisheries Habitat Restoration Plan is to "restore and maintain healthy steelhead trout and salmon populations as appropriate to each of the Three Creeks, by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles."[9] We agree with this purpose statement, but again note that the EIR must provide additional information regarding specific measures and schedule for implementation that are proposed under the Fisheries Habitat Restoration Plan.

2. The EIR Should Include an Accurate Baseline Description of the Fisheries.

The EIR "must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published."[10] "Knowledge of the regional setting is critical to the assessment of environmental impacts. Special emphasis should be placed on environmental resources that are rare or unique to that region and would be affected by the project.[11]

The steelhead and salmon fisheries are imperiled within the Three Creeks and throughout the region; although, unlike steelhead, Chinook salmon are not listed under the federal Endangered Species Act. Consistent with the applicable CEQA regulations, the EIR should

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6 FAHCE Settlement Agreement § 5.2.
7 14 Cal. Code of Regulations § 15124(b).
8 NOP, p. 2.
9 *Id.*
10 14 Cal. Code of Regulations § 15125(a).
11 *Id.* at § 15125(c).

include a description of the baseline condition of the steelhead and salmon fisheries. To this end, preparation of the EIR should include the field work needed to resolve the key fisheries management issues left unresolved at the time the FAHCE Settlement Agreement was initialed. This should include the population and migration work necessary to determine current fish population levels and the ways in which the fish utilize both the fresh water and estuarine waters in order to develop and evaluate proposed and alternative conservation measures necessary to achieve the biological goals of the FAHCE Program.

We note that at the time the FAHCE Settlement Agreement was initialed there was some dispute as to whether Chinook salmon were native to the Three Creeks. We submitted evidence, including a report by the California Department of Fish and Game,[12] that the fish were native, but we understand that some District Staff disputed this. Regardless, the FAHCE Agreement commits to restore both the steelhead and salmon fisheries to these waters. Further, the District's obligations under the Fish and Game[13] and Water Codes[14] are not limited to the protection of native fisheries. To the extent the discussion in the EIR disputes that the salmon are native to these waterways, it should also summarize the evidence that shows they are.

3. The EIR Should Evaluate a Reasonable Range of Alternatives.

The EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation."[15] The discussion of alternatives must "include sufficient information about each alternative to allow evaluation, analysis, and comparison with the proposed project."[16]

We request that the District consider the following alternative measures in the EIR, which we believe could feasibly contribute to the attainment of the FAHCE Program goals.

a. Cold-water Flow Versus Extended Wetted Flow Length Strategy

The EIR should compare the "cold water flow" versus the "extended flow length" strategy for managing water in the Three Creeks.[17] This should include a comparison of the impacts of these strategies on water storage, temperature, length of wetted creek, support for smolt outmigration, pulse flows for different rainfall years. It should include a review of the technical literature for both cold water management and for the hypothesis that steelhead have adapted to higher temperatures in areas where food production compensates for the metabolic stress of higher temperatures. It should also clarify the differences of these flow strategies on each of the Three Creeks.

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12 John E. Skinner, California Department of Fish and Game, *An Historical Review of the Fish and Wildlife Resources of the San Francisco Bay Area* (1962) (FAHCE Complaint, Exhibit 5).

13 *See* Cal. Fish and Game Code § 5937 ("The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition *any fish* that may be planted or exist below the dam." (emphasis added)).

14 *See generally* Cal. Water Code § 275.

15 14 Cal. Code of Regulations § 15126.6(a).

16 *Id.* at § 15126.6(d).

17 The "Three Creeks" include Coyote Creek, Guadalupe River, and Stevens Creek.

Consistent with section 6.2.4.5 of the FAHCE Settlement Agreement, the EIR should also evaluate the feasibility and suitability of using urban water (e.g., recycled water, stormwater discharges) to enhance the continuity of instream flow suitable for achieving the FAHCE management objectives in the Three Creeks, from the highest point of fish passage downstream to the San Francisco Bay.

b. Strategy for Preserving Steelhead During Drought

The EIR should consider alternative strategies for preserving steelhead during drought in the recovery period, including: (1) reserving enough water in Anderson Reservoir to sustain Coyote Creek during the drought; (2) rescuing and relocating fish; and (3) providing supplementary water by groundwater pumping or recycling of stream flow.

c. Temperature Refugia for Steelhead in the Guadalupe River

There is evidence that seeps, springs and pumped groundwater provide patches of coldwater habitat that allow salmonids to persist, and even thrive, in District managed stream reaches where average conditions in the reach have lethal mean water column temperatures. The EIR should (1) identify areas of thermal refugia for steelhead, (2) survey District management practices for pumped groundwater from buildings and transportation facilities, and (3) evaluate alternative management practices that might enhance temperature refugia for steelhead.

d. Chinook Salmon Conservation Measures

The EIR should identify and evaluate alternative conservation measures that address the unique needs of Chinook salmon. Consideration should be given to (1) flow related conservation measures during wet years that do not compete with the needs of steelhead, (2) development of flow/spawning refugia to improve spawning success, and (3) other means of increasing spawning gravel quality. For example, there is evidence that salmon redds are being scoured or smothered by winter flows/sediment loads in the current stream configuration. As indicated above, appropriate field work in preparation for the EIR would include spawning gravel quality and quantity surveys, pit tagging to identify movement patterns of Chinook between the stream and the estuary, and identification of potential flow/spawning refugia.

e. Facilities owned by others

The EIR should consider alternative habitat improvement measures that include addressing facilities owned by others in the achievement of the biological goals, including the use of partnerships. This approach was used to implement stream improvements at Blackberry Farm on Stevens Creek and is being considered for Singleton Road in San Jose. The fact that these facilities are owned by others should not be a barrier to their evaluation in the EIR.

4. <u>The EIR Should Evaluate the Cumulative Impacts of the FAHCE Program and Other Projects on the Three Creeks</u>.

Under CEQA, the EIR must describe, in detail, the significant effects on the environment of the project, including cumulative effects.[18] The purpose of the cumulative impacts analysis, specifically, is to prevent the environmental harm that could result from the piecemeal approval of several projects with related impacts.[19] The EIR must focus on the collective impact of the proposed project and other projects on the affected resources, not just the proposed project's relative effects to the overall problem.[20]

In order to ensure an adequate evaluation, the EIR's cumulative impacts analysis must include the following elements:

- "A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency";[21]

- "A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available"; and

- "A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects."[22]

The EIR's cumulative impacts analysis should include a discussion of the effects of the Guadalupe River Lower, Downtown, and Upper Flood Control Projects. The District is the local sponsor and has construction, operation, maintenance responsibilities for the projects. These projects impact the same fisheries that will be impacted by the FAHCE Program.

The EIR should also include a discussion of the effects of the homeless encampments located along the Three Creeks. The presence of encampments along these creeks results in pollution of the public waters and surrounding lands, death and harassment of spawning anadromous fish and other wildlife, degradation of aesthetic quality, and other interference with public use and enjoyment. This discussion should include a description of foreseeable plans to address the encampments, including any measures to prevent discharge of waste from

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[18] 14 Cal. Code Regs. §§ 15355, 15358; *City of San Diego v. Board of Trustees of Cal. State University*, 135 Cal.Rptr.3d 495, 507 (Cal. Ct. App. 2012).

[19] *San Joaquin Raptor*, 27 Cal.4th at 720; *Las Virgenes Homeowners Fed'n v. County of Los Angeles*, 177 Cal.App.3d 300, 306 (Cal. Ct. App. 1986).

[20] *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 721 (Cal. Ct. App. 1990).

[21] In the alternative, the cumulative impacts analysis may provide "[a] summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect." 14 Cal. Code Regs. § 15130.

[22] *Id.*

encampments into the creeks. The EIR should also address how the presence of the encampments will affect the District's planned efforts to implement the Fisheries Habitat Restoration Plan.

CONCLUSION

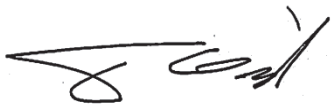
Thank you for considering these comments. We look forward to working with the District, resource agencies, and other stakeholders to obtain regulatory approvals necessary to implement the FAHCE Agreement. Please contact us with any questions regarding these comments.

Respectfully Submitted,



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Susana Rodriguez

From: frogs_and_fish@yahoo.com
Sent: Friday, June 30, 2017 6:16 PM
To: Scoping4FAHCE; Sarah Young
Subject: comments for scope FAHCE
Attachments: FAHCE Scoping comments.pdf

Attached are comments concerning scoping/NOP for the FAHCE effort.
The four documents referenced in the comments have previously be supplied to SCVWD, but can be resent on request.

Thank you for the opportunity to comment.

Jerry Smith
Sent from Mail for Windows 10

Comments on June FAHCE Scoping Meeting

Jerry J. Smith, Ph.D.
frogs_and_fish@yahoo.com
29 June 2017

The following comments are based upon my experience with Santa Clara County streams and fisheries since 1972, including my experience sampling on Upper Penitencia Creek, Guadalupe River and tributaries, Stevens Creek, and Coyote Creek since the early 1980's.

Planning for Chinook Salmon versus Steelhead

Both species have been present in Guadalupe and Coyote Creek since the 1980's, but their ecology and requirements are quite different. Central Valley Fall Chinook have attempted to enter the streams in September–October, earlier than the late fall and winter rain that would allow them to migrate very far upstream. Seasonal water temperatures are also far too warm at that time for the fertilized eggs of spawning Chinook to survive. Providing additional reservoir releases to aid in their upstream migration prior to cooler conditions (and rain) in early to mid-November provides no real advantage to the ecologically mismatched Chinook. In addition, it would waste scarce reservoir storage needed to provide summer and fall rearing habitat for native steelhead and also reduce groundwater percolation to the valley's water supply. The ecological adaptive advantage that Chinook have is that they can spawn in November, and juveniles can reach smolt size and emigrate in April-early June of their first year, before rearing conditions deteriorate in the lower reaches of the Coyote and Guadalupe watersheds; they do not have to rear in summer and fall when stream flows are reduced, water temperatures are high, and when water quality can be poor, especially in downstream urban reaches.

Adult steelhead, on the other hand, tend to enter the streams in January through early April, when runoff from winter rains (and urban runoff) can usually provide periodically sufficient stream flows to allow them to reach perennial and cooler spawning and rearing habitat farther upstream. However, they require access to higher quality (cooler, less contaminated) upstream rearing habitats, because they require 1-2 years of rearing in the stream before they can reach smolt size and emigrate.

The best strategy to accommodate the competing needs of Chinook and steelhead is to provide for mid-November through March adult access provided by winter runoff, and targeted augmented winter releases in drought years. Sufficient reservoir releases also need to be provided for adequate passage flows for smolt outmigration in late March through early June at a time when smolts of both species are emigrating.

Coyote Creek (see Smith 2016)

Coyote Creek Reservoir, imported water, and percolation operations provide a dominant portion of the north county water supply. However, steelhead (and Chinook) adult and smolt passage is precarious in Coyote Creek. The culvert and road apron crossing at Singleton Road severely restricts adult upstream migration at most low and high stream flows, preventing upstream access to steelhead spawning and summer rearing habitat. At low flows, passage requires jumping into and successfully negotiating 60 foot long culverts. At high flows velocities in the culvert or over the road apron are usually too high for passage. Even during the high flows (and flood) of 2017, passage upstream was probably not possible most of the time. *This severe fish passage barrier needs to be removed or extensively modified as soon as possible.*

During severe drought, such as in 2014 through much of winter 2016, when imported water deliveries were severely reduced, stream flows flows (even during winter storms) did not provide flow continuity between downstream Coyote Creek reaches (downstream of Metcalf Pond) and the live stream channel upstream of Bailey Avenue (due to the reduced extent of surface flow by percolation operations). Adult upstream passage and smolt downstream passage was blocked for almost all of that period, eliminating steelhead rearing and emigration for the 2013-2016 year classes, even though suitable spawning and rearing habitat was available in reaches downstream of Anderson Reservoir. Similar situations occurred on Stevens Creek. The extended duration of the impact may have extirpated, or at least severely reduced, steelhead in the creeks (Leicester and Smith 2016; Smith 2016*). In all years for Coyote, Stevens, and Guadalupe creeks, even during severe droughts, efforts should be made to coordinate reservoir releases with storm runoff (including urban runoff) to provide for some adult access and smolt outmigration, to prevent steelhead extirpation.*

Two other major issues affect steelhead potential in Coyote Creek downstream of Anderson Reservoir. The first is the quantity and water temperature of releases from Anderson Reservoir and from the San Felipe Pipeline at Anderson Reservoir. Coyote Creek on the valley floor has a very low gradient, so the crucial fast-water feeding habitat needed for juvenile steelhead rearing largely depends upon high stream flows, since riffle and run habitat constitutes only a small portion of the available habitat. In 2014 juvenile steelhead reared in the reach between the dam and the Ogier Ponds, but were confined to fast-water habitat where feeding could occur. Those fish were big enough to smolt as yearlings the following spring, and most attempted to emigrate downstream as smolts; they were lost in the drying reach farther downstream. High stream flow are needed to deepen and extend the riffles and runs and to provide fast-water feeding habitat in the heads of the many pools. Maintaining high stream flows all the way down to Metcalf Pond requires releases of 35-50 cfs. *These stream flows are higher than "natural" summer stream flows, and usually higher than winter stream flows, but are necessary to provide the maximum potential fast-water rearing habitat for steelhead. These high in-channel flows are also crucial to provide the groundwater percolation on which the valley depends for its water supply.*

The temperature of those stream flows is also important, since warmer water increases steelhead metabolic rate and food demands. Releases from the reservoir and from the San Felipe Pipeline have been relatively warm (>18-21+ degrees C) in late summer, as both San Luis Reservoir and Anderson Reservoir are drawn down. In addition, releases from Anderson Reservoir have come from mid-elevation in the reservoir through the multiport release system, since it feeds both the stream releases and the water treatment plant. Bottom water releases increase the cost and complexity of water treatment, but bottom water releases would provide much cooler water releases throughout the summer. *To the extent feasible, bottom water releases from Anderson Reservoir should be provided to maintain cooler stream temperatures, including to moderate the warmer late summer releases from the imported water pipeline. Future modifications at Anderson Reservoir should include increased flexibility in water temperatures of releases to the stream for percolation.*

The second major issue for steelhead rearing and production in Coyote Creek downstream of Anderson Reservoir is the present channel configuration that runs through the Ogier Pond Complex. The former off-channel gravel quarries became part of the live stream channel when floods in the 1990's rerouted the stream. The present alignment has two severe impacts for steelhead. First, cooler, heavier stream flow enters the ponds and sinks to near the bottom. It is replaced in the outflow by warm surface water. The ponds increase stream temperatures downstream by 3-6 degrees C compared to water temperatures upstream. The warmed water (to 22-25 degrees C) increases the metabolic rate and food demands of steelhead downstream of the ponds and makes it less likely that steelhead can survive and grow. Absent the ponds, steelhead rearing could potentially be supported downstream to near the Metcalf Pond, and the fish would be larger and more abundant. Second, the ponds are full of predatory largemouth and spotted bass, which are a severe predation threat to juvenile steelhead and smolts trying to move downstream through the ponds. *The Ogier Ponds should be bypassed by a realigned stream channel to eliminate the predation and temperature impact problems and substantially increase potential steelhead production and survival.*

The Metcalf Pond, a crucial component in the Coyote Creek ground water recharge system, similarly has temperature and predation effects, but water temperatures and lower stream flows downstream of the Metcalf Pond already preclude steelhead rearing anyway. In addition, the Metcalf Pond could be occasionally, temporarily drained to reduce the population of spotted and largemouth bass and other predatory fish.

<u>Coyote Creek Trap and Truck</u>

There is little or no potential steelhead rearing habitat in the mostly intermittent or warm streams upstream of Coyote Reservoir (where I have conducted extensive western pond turtle studies). However, San Felipe Creek, upstream of Anderson Reservoir, usually provides perennial habitat, suitable for juvenile steelhead, except in extreme droughts (almost all of the

stream was dry in 2014 and 2015*). A limited trap and truck operation for steelhead adults and smolts could augment (at substantial effort and cost) the much more extensive habitat downstream of Anderson Reservoir. The effort also could produce an adfluvial population of steelhead within San Felipe Creek (for spawning and early rearing) and Anderson Reservoir (the ocean surrogate). This population could serve as a refuge/backup population during droughts to prevent extirpation of the Coyote Creek steelhead run.*

Upper Penitencia Creek (Leicester and Smith 2016b)

Upper Penitencia Creek consists of two general habitats, an upstream foothill habitat, mostly within Alum Rock Park, and a downstream valley floor habitat with a highly percolating stream bed. The upstream habitat has perennial portions, depending upon groundwater input, including the "springs" area with the city park, and upon modest releases from Cherry Flat Reservoir, a small headwater impoundment. During the 2013-2015 drought, reservoir releases didn't contribute in summer 2014 and 2015, and only the "springs" area had surface flow. In most years, however, the stream is perennial throughout the park and has provided potential rearing habitat for steelhead and resident rainbow trout. Despite the severe drought conditions in recent years, potential rearing habitat was available, but difficulties for adult upstream access and smolt downstream emigration in spring have apparently prevented steelhead use since 2013.

Downstream of the park, the percolating stream bed rapidly loses surface flow, and the stream would be dry by mid-summer, if it were not for its use for streambed water percolation downstream of the off-channel percolation ponds, which also release South Bay Aqueduct water to the stream bed for in-channel percolation. This stream bed percolation was lost in 2014 through much of 2016 because of the lack of available South Bay Aqueduct imported water. When the streambed is used for percolation, a warm-water stream habitat has been maintained from the percolation ponds downstream to near or at Coyote Creek. Despite the warm water, the reach has supported some steelhead rearing in some years, but has also regularly maintained a robust population of other native fishes, including California roach, prickly sculpin, Sacramento sucker, and Pacific lamprey (species of concern).

More importantly, the live stream between the percolation ponds and Coyote Creek has been crucial in allowing steelhead smolts to migrate to Coyote Creek in late March through May, and to a lesser degree, to allow adult steelhead upstream migration between storms in winter. Without this augmented stream flow (and its ground water recharge benefits) the permeable channel can percolate 6-10 or more cfs and lose surface continuity that would allow fish passage. Even with the stream flow augmentation for percolation, there is usually a dry, or nearly dry, gap between the stream flow coming out of Alum Rock Park and the reach downstream of the percolation pond discharge by April or May.

Groundwater percolation operations should be continued in Upper Penitencia Creek to aid adult and smolt fish passage. In addition, brief additional releases from Cherry Flat Reservoir should be used, as needed, to close the dry-back gap, between Alum Rock Park outflow and the percolation ponds, in spring for smolt outmigration.

Stevens Creek (see Leicester and Smith 2016c)

Stevens Creek Reservoir is small (3100 acre feet), and its limited storage is insufficient in many years to provide seasonally optimal releases for adult migration, smolt emigration, and amount and quality (water temperature) of rearing releases. *During the recent extended drought poor adult and smolt passage may have eliminated steelhead in the stream, even though significant spawning and rearing habitat was available in all years (Leicester and Smith 2016c).* The accessible stream contains three ecologically separate reaches: a reach downstream of the reservoir that supports perennial stream flows from reservoir releases, with the distance varying with the amount of stored water available; a middle reach of percolating stream channel, which is seasonally dry; and a perennial downstream reach (downstream of Middlefield Road) supported by emerging ground water. The two downstream reaches are heavily urbanized, and impervious surfaces provide substantial, but brief, runoff even with small winter storms.

Adult fish passage to the perennial reach downstream of the reservoir has problems, although a major barrier, a fish ladder and bypass channel near Evelyn Avenue/Central Expressway was successfully modified for passage in fall 2015. Sustained stream flows for winter adult passage require periodic reservoir releases or spilling in January through March or early April. During the recent drought inadequate releases and the problem at Evelyn Avenue apparently prevented most or all adult passage. A fish ladder at a high drop structure downstream of Fremont Avenue is a major periodic passage problem due to clogging of the ladder with gravel or debris and/or sediment deposition blocking the top of the ladder. *Adequate reservoir releases/spills for adult migration, even during drought years, are necessary to ensure that steelhead are able to regularly spawn and rear in the upstream reach. The ladder at the Fremont Drop Structure needs to be checked and maintained for passage in winter and should probably be modified.*

The drying middle reach of the stream (and passage issues prior to 2016 at Evelyn Avenue) is a major constraint on smolt outmigration during the late March through May smolt migration period. Smolt migration and adequate reservoir releases to support it have been largely ignored in past management actions for steelhead. *Smolt and adult migration need to be priorities in all years or else the stream will only support a small resident rainbow trout population.*

The limited stored water available to support summer rearing should be provided in releases that optimize a combination of amount and quality of fast-water rearing habitat and water temperature through mid-September, when the reservoir tends to de-stratify due to longer, cooler nights. Targeting only water temperature of releases tends to result in much lower extent of wetted channel and less fast-water feeding habitat within the wetted channel, resulting in fewer and smaller steelhead in the mostly heavily-shaded channel.

During the drought the heavily drawn down reservoir allowed substantial transport of stored reservoir sediment across the reservoir bed to near the outlet. This has resulted in greatly increased turbidity of the releases from the reservoir and substantial deposition of sediment in the perennial channel downstream of the reservoir. The turbidity reduces feeding efficiency of steelhead (especially with the heavily shaded channel), and sediment deposition has substantially reduced streambed quality for invertebrate production (as fish food) and for steelhead spawning redds. *Actions should be taken, including potential dredging near the outlet, to reduce the turbidity of reservoir releases.*

Guadalupe Watershed (see Leicester and Smith 2016a)

Because of better stream flow and water quality in the downstream reach (Downtown San Jose) compared to other south Bay streams, Guadalupe River provides the best potential for Chinook salmon. Adults can successfully spawn as the stream flow increases and temperatures cool in November, juveniles can rear through winter, and smolts can emigrate in late spring, before water quality conditions deteriorate.

Guadalupe Reservoir and Almaden Reservoir have relatively small storage capacity to provide releases for adult passage and smolt migration in Guadalupe Creek, Alamitos Creek and downstream through the Guadalupe River, and also for summer rearing in Guadalupe and Alamitos creeks. Most Lexington Reservoir water is percolated upstream of the impassable Camden Avenue Drop structure on Los Gatos Creek. During the recent extended drought, a combination of poor adult and smolt passage apparently precluded steelhead use of potential rearing habitat in Guadalupe Creek (Leicester and Smith 2016a). Similar problems probably occurred for Chinook and for steelhead in other portions of the Guadalupe River system. *Therefore, priorities should be: providing for periodic adult steelhead passage in January through early April, and for smolt outmigration by Chinook and steelhead in late March through May*.

Releases for summer/fall rearing should optimize a combination of amount of release to provide fast-water feeding habitat and water temperature of those releases through mid-September, when reservoirs destratify.

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Smith, J. J. 2016. Fish population sampling in 2016 on Coyote Creek. San Jose State University. 33 page report.

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Santa Clara Valley Water District

October 24, 2018

Ms. Rosemary Cambra, Chairperson
Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
P.O. Box 360791
Milpitas, CA. 95036

RE: Invitation to Provide Information for EIR for the Fish and Aquatic Habitat Collaborative Effort Project on Stevens Creek, Coyote Creek and Guadalupe River for the Santa Clara Valley Water District, California.

Dear: Chairperson Cambra,

The Santa Clara Valley Water District (SCVWD) proposes to implement the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Settlement Agreement through a Fish Habitat Restoration Plan (FHRP).

The FHRP is designed to improve fish passage, enhance fish habitat and improve stream flows within Stevens Creek, Coyote Creek and the Guadalupe River – termed the Three Creeks – and their corresponding watersheds. The plan would maintain a reliable current and future water supply and water deliveries where SCVWD holds water rights licenses in northern Santa Clara County, California. SCVWD water supply operations in the project area also include eight reservoirs, a network of conveyance systems and three sets of percolation ponds that provide recharge to local groundwater basins. (Figure 1).

Background

In 1996, the Guadalupe-Coyote Resource Conservation District filed a complaint with the State Water Resources Control Board alleging SCVWD operations impacted fish and wildlife in conflict with requirements of the Water Code, Fish and Game Code and other State of California laws. In response, SCVWD convened local environmental organizations and state and federal resource agencies in settlement negotiations. The parties developed what is known as the FAHCE, with measures intended to meet the management objectives specified in the Settlement Agreement.

The Settlement Agreement contains a restoration program detailing provisions defined during the FAHCE process for flow measures, fish passage improvements and fish habitat restoration measures. Applying these measures is intended to restore and maintain healthy populations of Central California Coastal steelhead trout and Central Valley fall-run Chinook salmon populations as appropriate for each of the Three Creeks. This would be accomplished by providing suitable spawning and rearing habitat within each watershed and adequate passage for

Appendix C – Stakeholder Engagement

C2: Tribal Letters

Ms. Rosemary Cambra, Chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area
Ms. Ramona Garibay, Chairman, The Trina Marine Ruano Family
Mr. Valentin Lopez, Chairman, Amah Mutsun Tribal Band
Ms. Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan

adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles.

The FHRP addresses all measures described in the Settlement Agreement and provides additional detail about how each measure has been or would be implemented. Monitoring and maintenance of measures completed or of certain connected existing SCVWD facilities is also included.

As the lead agency responsible for CEQA compliance SCVWD has determined that implementing the proposed FHRP measures constitutes a "project" for the purposes of CEQA (pursuant to CEQA Guidelines §15378) and would potentially result in significant environmental effects. Accordingly, SCVWD is preparing a Program EIR for the Project (CEQA Guidelines §15064).

Although formal Assembly Bill 52 tribal consultation is not required for this EIR[1], SCVWD is interested in engaging with Native American tribes through this outreach process. SCVWD is particularly interested in your views on whether the project may potentially affect any tribal resources with cultural value to your tribe and which the EIR should consider.

Please direct any comments, questions, concerns or requests for further information to:

Sarah Young
Senior Project Manager
Phone: 408-630-2468
Email: syoung@valleywater.org

To ensure the draft EIR's timely completion, we would appreciate a response to this request within the next 30 days.

We understand you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

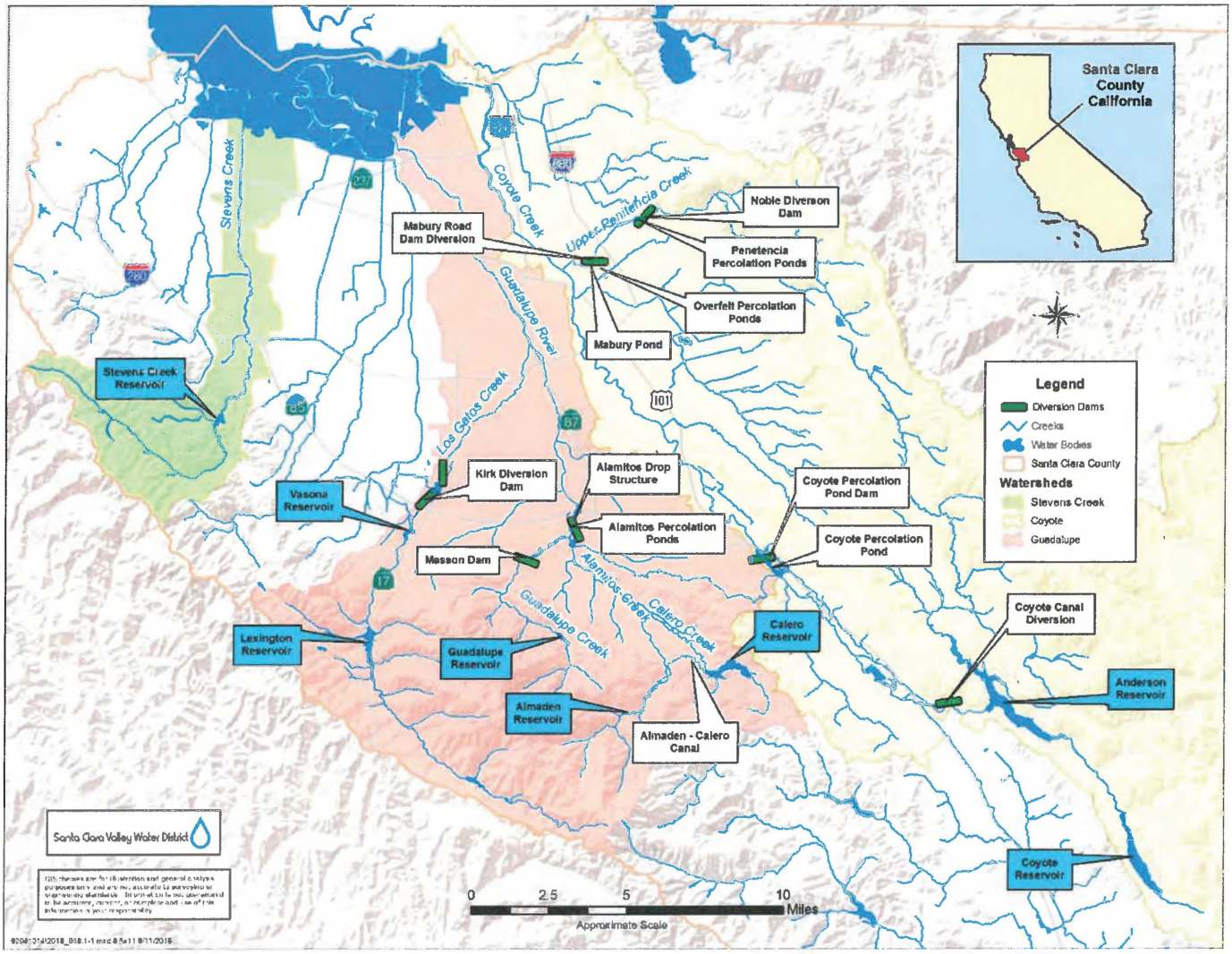
Your timely response will assist us in incorporating your concerns into project planning.

Very respectfully,

Vincent Gin
Deputy Operating Officer

[1] AB 52 is applicable to projects that have a Notice of Preparation filed on or after July 1, 2015. The NOP for this project was filed on February 2, 2015.

Figure 1: FAHCE Fish Habitat Restoration Plan Proposed Project Area and District Water Supply Facilities



5750 Almaden Expressway, San Jose, CA 95118-3686 | (408) 265-2600 | www.valleywater.org

Santa Clara Valley Water District

October 24, 2018

Ms. Ramona Garibay, Representative
The Trina Marine Ruano Family
30940 Watkins Street
Union City, CA. 94587

RE: Invitation to Provide Information for EIR for the Fish and Aquatic Habitat Collaborative Effort Project on Stevens Creek, Coyote Creek and Guadalupe River for the Santa Clara Valley Water District, California.

Dear: Representative Garibay,

The Santa Clara Valley Water District (SCVWD) proposes to implement the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Settlement Agreement through a Fish Habitat Restoration Plan (FHRP).

The FHRP is designed to improve fish passage, enhance fish habitat and improve stream flows within Stevens Creek, Coyote Creek and the Guadalupe River – termed the Three Creeks – and their corresponding watersheds. The plan would maintain a reliable current and future water supply and water deliveries where SCVWD holds water rights licenses in northern Santa Clara County, California. SCVWD water supply operations in the project area also include eight reservoirs, a network of conveyance systems and three sets of percolation ponds that provide recharge to local groundwater basins. (Figure 1).

Background

In 1996, the Guadalupe-Coyote Resource Conservation District filed a complaint with the State Water Resources Control Board alleging SCVWD operations impacted fish and wildlife in conflict with requirements of the Water Code, Fish and Game Code and other State of California laws. In response, SCVWD convened local environmental organizations and state and federal resource agencies in settlement negotiations. The parties developed what is known as the FAHCE, with measures intended to meet the management objectives specified in the Settlement Agreement.

The Settlement Agreement contains a restoration program detailing provisions defined during the FAHCE process for flow measures, fish passage improvements and fish habitat restoration measures. Applying these measures is intended to restore and maintain healthy populations of Central California Coastal steelhead trout and Central Valley fall-run Chinook salmon populations as appropriate for each of the Three Creeks. This would be accomplished by providing suitable spawning and rearing habitat within each watershed and adequate passage for

adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles.

The FHRP addresses all measures described in the Settlement Agreement and provides additional detail about how each measure has been or would be implemented. Monitoring and maintenance of measures completed or of certain connected existing SCVWD facilities is also included.

As the lead agency responsible for CEQA compliance SCVWD has determined that implementing the proposed FHRP measures constitutes a "project" for the purposes of CEQA (pursuant to CEQA Guidelines §15378) and would potentially result in significant environmental effects. Accordingly, SCVWD is preparing a Program EIR for the Project (CEQA Guidelines §15064).

Although formal Assembly Bill 52 tribal consultation is not required for this EIR[1], SCVWD is interested in engaging with Native American tribes through this outreach process. SCVWD is particularly interested in your views on whether the project may potentially affect any tribal resources with cultural value to your tribe and which the EIR should consider.

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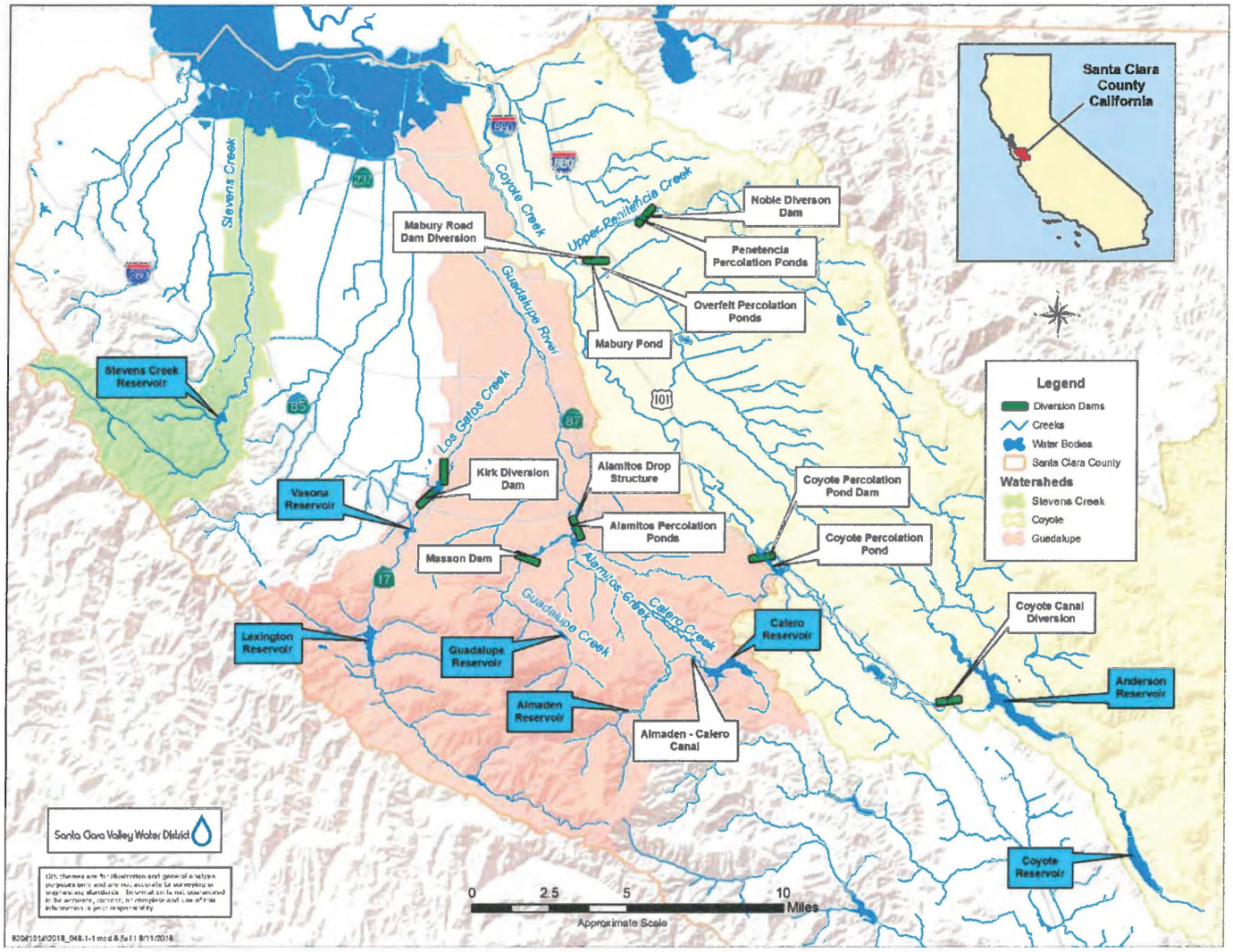
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Deputy Operating Officer

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Santa Clara Valley Water District

October 24, 2018

Mr. Valentin Lopez, Chairman
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA. 95632

RE: Invitation to Provide Information for EIR for the Fish and Aquatic Habitat Collaborative Effort Project on Stevens Creek, Coyote Creek and Guadalupe River for the Santa Clara Valley Water District, California.

Dear: Chairman Lopez,

The Santa Clara Valley Water District (SCVWD) proposes to implement the Fish and Aquatic Habitat Collaborative Effort (FAHCE) Settlement Agreement through a Fish Habitat Restoration Plan (FHRP).

The FHRP is designed to improve fish passage, enhance fish habitat and improve stream flows within Stevens Creek, Coyote Creek and the Guadalupe River – termed the Three Creeks – and their corresponding watersheds. The plan would maintain a reliable current and future water supply and water deliveries where SCVWD holds water rights licenses in northern Santa Clara County, California. SCVWD water supply operations in the project area also include eight reservoirs, a network of conveyance systems and three sets of percolation ponds that provide recharge to local groundwater basins. (Figure 1).

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Although formal Assembly Bill 52 tribal consultation is not required for this EIR[1], SCVWD is interested in engaging with Native American tribes through this outreach process. SCVWD is particularly interested in your views on whether the project may potentially affect any tribal resources with cultural value to your tribe and which the EIR should consider.

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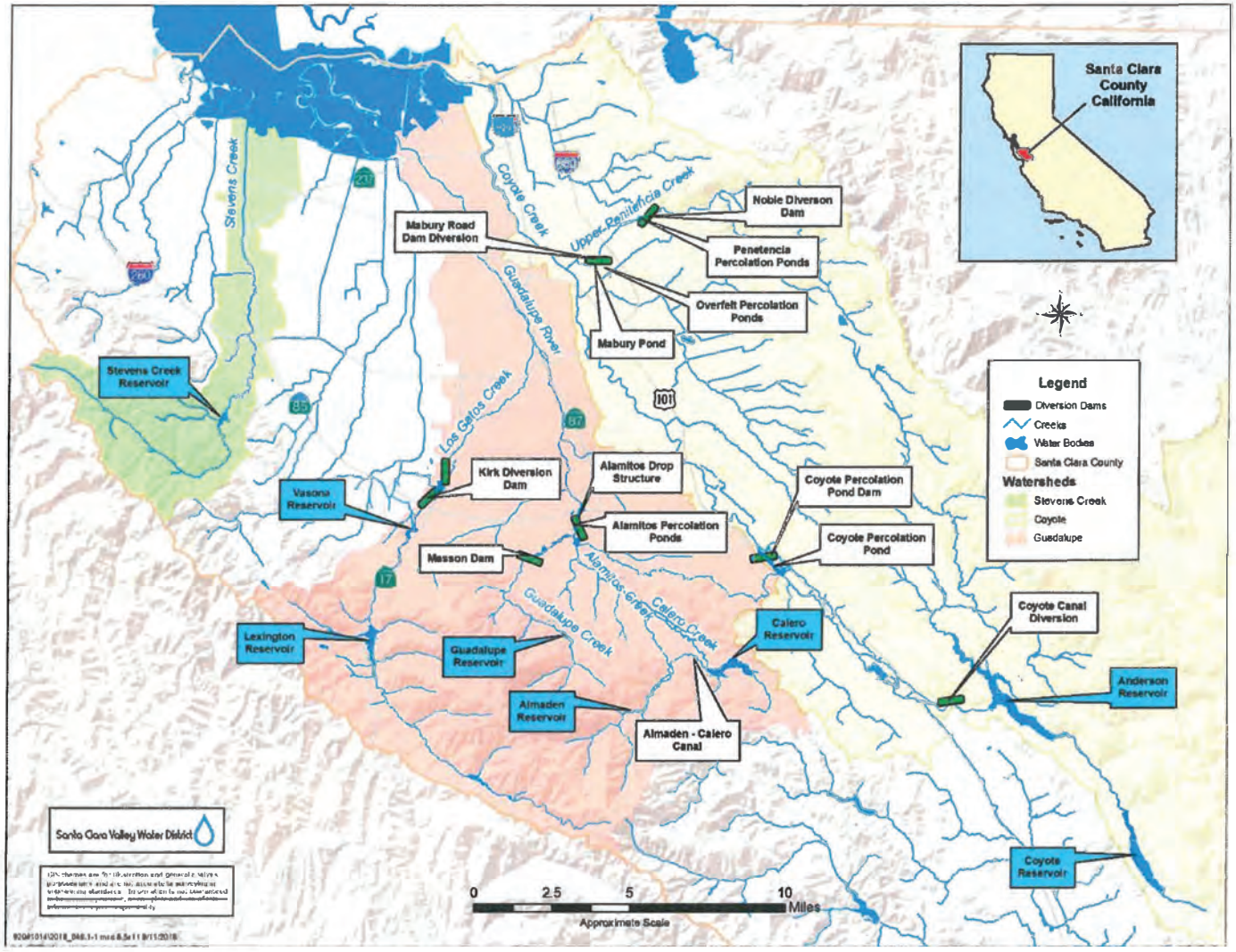
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Santa Clara Valley Water District

October 24, 2018

Ms. Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA. 95024

RE: Invitation to Provide Information for EIR for the Fish and Aquatic Habitat Collaborative Effort Project on Stevens Creek, Coyote Creek and Guadalupe River for the Santa Clara Valley Water District, California.

Dear: Chairperson Sayers,

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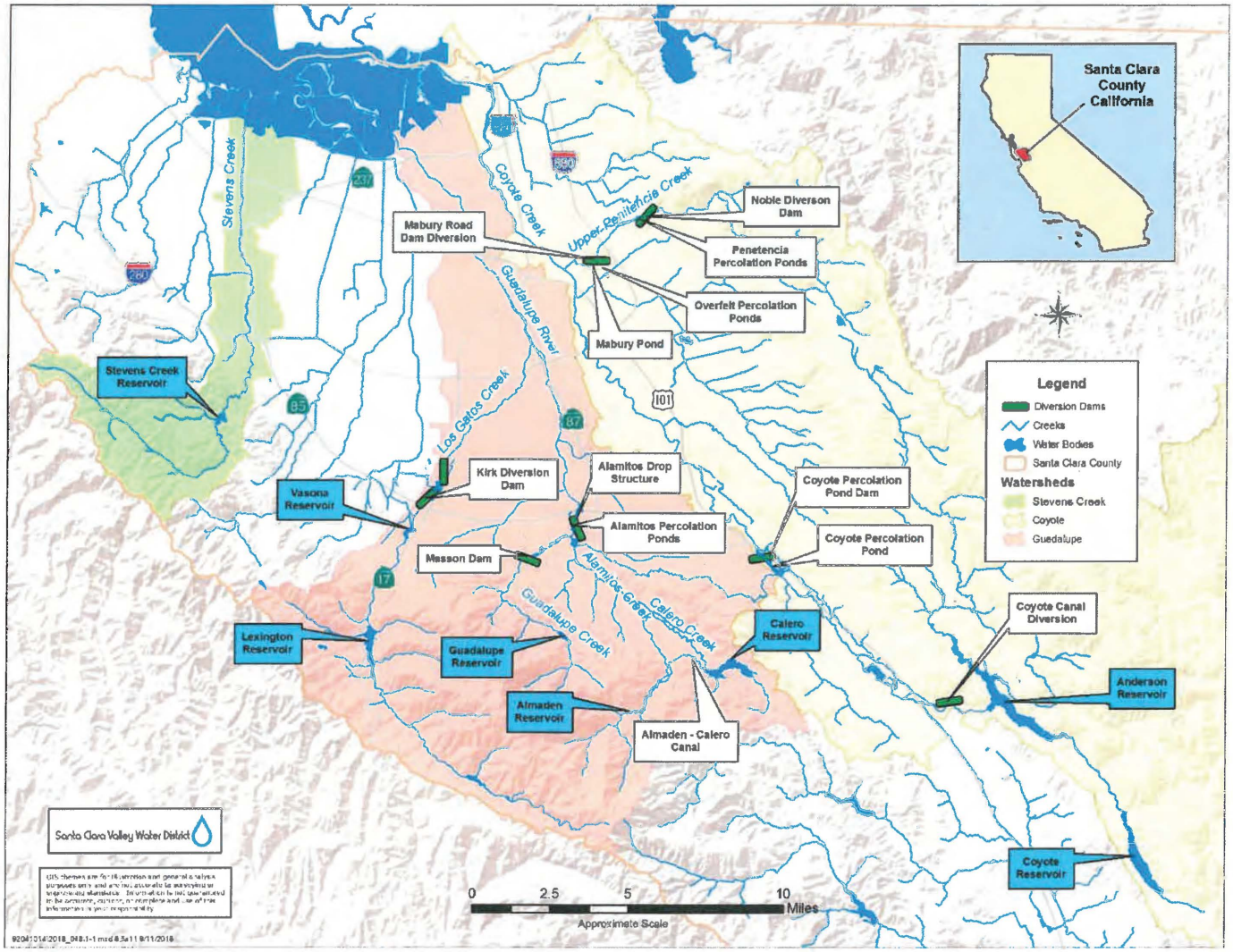
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Figure 1: FAHCE Fish Habitat Restoration Plan Proposed Project Area and District Water Supply Facilities



Appendix C – Stakeholder Engagement

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Appendix D
District Best Management Practices

Appendix D – District Best Management Practices

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BEST MANAGEMENT PRACTICES HANDBOOK

SANTA CLARA VALLEY WATER DISTRICT COMPREHENSIVE LIST

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Purpose

The Best Management Practices Handbook (Handbook) provides a list of Santa Clara Valley Water District (District) Best Management Practices (BMPs), intended to be incorporated into projects or activities. It aids in accomplishment of the stewardship component of the District Ends Policies by incorporating the basic principle of avoiding or minimizing the potential to impact the environment negatively in projects and activities.

Process

The Handbook is a controlled ISO document. It is a technical guidance document (W751M01) under ISO 14001 Environmental Management System Environmental Planning Q520D01 designed to ensure that the District meets its responsibilities under the California Environmental Quality Act (CEQA).[1] Work Instruction *W520M03 Section 3 – Mitigation, Monitoring and Reporting Programs* describes the standard policies for environmental review process used to apply these BMPs to projects and activities, consistent with CEQA Guidelines §15097(e).

The handbook is an electronic repository of information that allows staff to access and incorporate standardized BMPs, as/if appropriate, into CEQA documents efficiently, BMPs are incorporated into project design or activity implementation during an analytical process to identify and avoid or minimize project impacts for a particular project. They can be included as a component of the project description for projects at all levels of review, including categorical and/or statutory exemptions. The BMPs are selected by an Environmental Planner, with assistance from other project team members, (including Biologists, as well as design-, construction-, and maintenance engineers), to identify the appropriate BMPs for the proposed work activities. Thus, they only become official for the project after the CEQA document for that project has been certified or approved.

For projects or activities where implementation of BMPs would not suffice to avoid or minimize the impacts to a level below that of significance, a higher level of environmental evaluation would be required, leading to a higher level of documentation (e.g., MND or EIR). In instances where a project requires additional avoidance or minimization measures not included in this handbook, such practices and/or measures would be evaluated appropriately during the environmental review process and incorporated as project-specific mitigation measures and, potentially, be incorporated in a future revision of the Handbook.

Organization

For ease in application, the BMPs have been organized into the standard environmental factors found in the Initial Study Checklist, which is consistent with the CEQA Guidelines.[2] This supports the 'activities and impacts matrix' (AIM) approach contained in *W520M03 Section 3 – Mitigation, Monitoring and Reporting Program.* Generally, these practices are either structural treatments (e.g., devices) or non-structural behaviors, methods, actions, procedures, or other management practices that have been shown to avoid or minimize potential adverse environmental effects.

The Handbook also includes sets of BMPs grouped together to address more commonly conducted activities such as bank protection; storm water management; discharge activities; grading and excavation; pesticide use; sediment removal and storage; vegetation management; and, well and exploratory boring construction-, modification-, and destruction operations. These '*BMP Suites*' make it easier for environmental planners to include the applicable BMPs consistently in a project's environmental document. When using a set of activity-based BMPs, individual practices should be reviewed to ensure its applicability.

[1] Public Resources Code Section 21000 *et seq.*
[2] Title 14 Code of Regulations Section 15000 *et seq.* Appendix G

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Limitations

Under no circumstances should the entire contents of the Handbook be included as supporting information in an Initial Determination Memorandum (IDM), or in a project's design (i.e., plans and specifications) to circumvent an analysis of impacts from project activities. The consideration of the suitability of *individual* BMPs, to avoid or minimize the significance of impacts, is central to the environmental review process.

Furthermore, since BMPs are District standard operating procedures, and are not project-specific, they are not mitigations and are not to be used as a substitute for proper environmental evaluation and mitigation.

The BMPs reflect how the District currently conducts business. They are updated as new methods or industry standards are identified that provide an opportunity to further improve upon our practice of environmental stewardship, while maintaining a high level of service to the public. Thus, these BMPs are a guideline and not a substitute for analytical decision-making on how to avoid and minimize impacts.

QEMS Elements

Reference Documents:

See page 32 for a listing of both external and internal references

Requirements:

ISO 9001

7.5.1 Control of Production and Service Provision

ISO 14001

4.4.6 Operational Control

Quality Records:

None

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Change History:

DATE	REVISION	COMMENTS
11/2006	A	Converted Watershed QEMS WW75109 into W751M01
1/2009	B	BMP updated
03/22/10	C	The Process Owner was changed from Debra Caldon to Jennifer Castillo
08/31/10	D	Stakeholder working group (WG) made some final changes including: Bill Smith, David Dunlap, Jamie McLeod and Janell Hillman and Jennifer Castillo. Prior to the WG, the document was sent for review by biologists, environmental planners and vegetation specialists.
01/24/11	E	Added QEMS Elements (Reference documents, Requirements, Quality Records. Added references to CEQA, Q520D01, & Q751D02 on last page. Changed BI-7 Avoid Secondary Poisoning from Rodenticide Use to inspect on a weekly basis instead of the fifth day.
01/08/14	F	Updated BMPs based on updated Stream Maintenance Program and other standard practices incorporated into District projects and activities.
9/15/14	G	Removed BMPs BI-3, -8, -10, -11; CU-2; WQ-4, -7, -8, -11, -14, -17, -18; NO-1, -2; and TR-2 from version F of Handbook. Modified BMPs BI-6 and CU-1 from version F of Handbook. Revised document number to the new QEMS numbering convention (previously identified as W751M01)

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Table 1 - Comprehensive BMP List

BMP #	BMP Name	
Air Quality		
AQ-1	Use Dust Control Measures	
AQ-2	Avoid Stockpiling Odorous Materials	
Biological Resources		
BI-1	Avoid Relocating Mitten Crabs	
BI-2	Minimize Impacts to Steelhead	
BI-3	Remove Temporary Fills	
BI-4	Minimize Adverse Effects of Pesticides on Non-target Species	
BI-5	Avoid Impacts to Nesting Migratory Birds	
BI-6	Avoid Impacts to Nesting Migratory Birds from Pending Construction	
BI-7	Minimize Impacts to Vegetation from Survey Work	
BI-8	Choose Local Ecotypes Of Native Plants and Appropriate Erosion-Control Seed Mixes	
BI-9	Restore Riffle/Pool Configuration of Channel Bottom	
BI-10	Avoid Animal Entry and Entrapment	
BI-11	Minimize Predator-Attraction	
Cultural Resources		
CU-1	Accidental Discovery of Archaeological Artifacts or Burial Finds	
Hazards & Hazardous Materials		
HM-1	Comply with All Pesticide Application Restrictions and Policies	
HM-2	Minimize Use of Pesticides	
HM-3	Post Areas Where Pesticides Will Be Used	
HM-4	Comply with All Pesticide Usage Requirements	
HM-5	Comply with Restrictions on Herbicide Use in Upland Areas	
HM-6	Comply with Restrictions on Herbicide Use in Aquatic Areas	
HM-7	Restrict Vehicle and Equipment Cleaning to Appropriate Locations	
HM-8	Ensure Proper Vehicle and Equipment Fueling and Maintenance	
HM-9	Ensure Proper Hazardous Materials Management	
HM-10	Utilize Spill Prevention Measures	
HM-11	Ensure Worker Safety in Areas with High Mercury Levels	
HM-12	Incorporate Fire Prevention Measures	
HM-13	Avoid Impacts from Naturally Occurring Asbestos	
Hydrology/Water Quality		
WQ-1	Conduct Work from Top of Bank	
WQ-2	Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms	
WQ-3	Limit Impact of Pump and Generator Operation and Maintenance	
WQ-4	Limit Impacts From Staging and Stockpiling Materials	
WQ-5	Stabilize Construction Entrances and Exits	
WQ-6	Limit Impact of Concrete Near Waterways	
WQ-7	Isolate Work in Tidal Areas With Use of Coffer Dam	
WQ-8	Minimize Hardscape in Bank Protection Design	
WQ-9	Use Seeding for Erosion Control, Weed Suppression, and Site Improvement	
WQ-10	Prevent Scour Downstream of Sediment Removal	
WQ-11	Maintain Clean Conditions at Work Sites	
WQ-12	Manage Well or Exploratory Boring Materials	
WQ-13	Protect Groundwater from Contaminates Via Wells or Exploratory Borings	
WQ-14	Backfill Completed Exploratory Borings	
WQ-15	Prevent Water Pollution	
WQ-16	Prevent Stormwater Pollution	
WQ-17	Manage Sanitary and Septic Waste	

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Table 1 - Comprehensive BMP List

BMP #	BMP Name	
Transportation/Traffic		
TR-1	Use Suitable Public Safety Measures	

Table 2
Santa Clara Valley Water District
BMP Suite List

BMP Suite
Bank Protection BMP Suite
Stormwater Management BMP Suite
Discharge Activities BMP Suite
Grading and Excavation BMP Suite
Sediment Removal and Storage BMP Suite
Vegetation Management and Removal BMP Suite
Well and Exploratory Boring Construction, Modification, or Destruction BMP Suite

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Air Quality

AQ-1 **Use Dust Control Measures**	The following Bay Area Air Quality Management District (BAAQMD) Dust Control Measures will be implemented: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day; 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered; 3. 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; 4. Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways; 5. All vehicle speeds on unpaved roads shall be limited to 15 mph; 6. 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; 7. 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); 8. 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; 9. Correct tire inflation shall be maintained in accordance with manufacturer‘s specifications on wheeled equipment and vehicles to prevent excessive rolling resistance; and, 10. 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 take corrective action within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations will be included.
AQ-2 **Avoid Stockpiling Odorous Materials**	Materials with decaying organic material, or other potentially odorous materials, will be handled in a manner that avoids impacting residential areas and other sensitive receptors, including: 1. Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and 2. Odorous stockpiles will be disposed of at an appropriate landfill.

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Biological Resources

BMPs for biological resources are designed to minimize impacts to sensitive resources, including special status and listed species, and sensitive natural communities and habitats. Sensitive species and habitats may be directly or indirectly affected by project activities such as excavation, fill, vegetation management including pruning or removal, alteration of hydrological regime, etc. Impacts to species and natural communities are regulated by agencies such as the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Bay Conservation and Development Commission, as well as corresponding laws such as the State and Federal Endangered Species Acts, the Migratory Bird Treaty Act, the Clean Water Act, the Fish and Game Code, the Native Plant Protection Act, and the California Environmental Quality Act**.** In addition, the California Native Plant Society publishes a rarity listing status for plants that is used by CDFW and is required for review under CEQA.

BI-1 **Avoid Relocating Mitten Crabs**	Sediment potentially containing Chinese Mitten Crabs will not be transported between San Francisco Bay Watersheds and Monterey Bay Watersheds, specifically: 1. Sediment removed from the San Francisco Bay watersheds will not be transported south of Coyote Creek Golf Drive in south San Jose, and the intersection of McKean and Casa Loma Roads; and, 2. Earth moving equipment used in the San Francisco Bay watershed will be cleaned before being moved to, and used in, the Pajaro Watershed.
BI-2 **Minimize Impacts to Steelhead**	Minimize potential impacts to salmonids by avoiding routine use of vehicles and equipment in salmonid streams between January 1 and June 15.
BI-3 **Remove Temporary Fill**	Temporary fill materials, such as for diversion structures or cofferdams, will be removed upon finishing the work or as appropriate. The creek channels and banks will be re-contoured to match pre-construction conditions to the extent possible. Low-flow channels within non-tidal streams will be contoured to facilitate fish passage and will emulate the preconstruction conditions as closely as possible, within the finished channel topography.
BI-4 **Minimize Adverse Effects of Pesticides on Non-target Species**	"Pesticides" refers to any herbicide, insecticide, rodenticide, algaecide, fungicide, or any combination of substances intended to prevent, destroy, or repel any pest. Pesticides will be handled, stored, transported, and used in compliance with any established directions and in a manner that minimizes negative environmental effects on non-target species and sensitive habitats. The proposed project plan for handling, storing, transporting and using pesticides must be reviewed and approved by <u>both</u> of the following subject matter experts: 1. District's Pest Control Advisor (a State-certified Qualified Applicator) – the plan will be reviewed, and modified as deemed appropriate, for compliance with: District policy, label restrictions and any advisories published by the California Department of Pesticide Regulation, the Santa Clara County Division of Agriculture, and the U.S. EPA bulletin *Protecting Endangered Species, Interim Measures for Use of Pesticides in Santa Clara County* (USEPA 2000). 2. Qualified District Biologist (as defined in EMAP-30264) – the plan will be reviewed,

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Biological Resources

	and modified as deemed appropriate, for compliance with: District policy, approved environmental review documents, project permits, and avoidance of all known listed (Threatened or Endangered) and sensitive species. Information sources for determination of all known locations of species that may be harmed by pesticides include the District's GIS system and California Natural Diversity Database (CNDDB). Either the District's Pest Control Advisor or the Qualified District Biologist may modify the proposed pesticide plan, such as establishing buffer areas or prohibiting the use of pesticides outright, based on site-specific data, current regulatory requirements, and District policy. The purchase of all pesticides must be approved by the District's Pest Control Advisor to ensure compliance with the District's *Control and Oversight of Pesticide Use* policy and appropriate regulatory agency reporting requirements.
BI-5 **Avoid Impacts to Nesting Migratory Birds**	Nesting birds are protected by state and federal laws. The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction. Nesting bird surveys will be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of birds, bird nests, or nesting migratory birds. Inactive bird nests may be removed with the exception of raptor nests. Birds, nests with eggs, or nests with hatchlings will be left undisturbed.
BI-6 **Avoid Impacts to Nesting Migratory Birds from Pending Construction**	Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices will be maintained throughout the nesting season or until completion of work in an area makes the devices unnecessary. All exclusion devices will be removed and disposed of when work in the area is complete.
BI-7 **Minimize Impacts to Vegetation from Survey Work**	Survey cross-sections will be moved, within acceptable tolerances, to avoid cutting dense riparian vegetation and minimize cutting of woody vegetation, taking advantage of natural breaks in foliage. If the cross-section cannot be moved within the established acceptable tolerances to avoid impacts to dense riparian or woody vegetation, the survey section will be abandoned.
BI-8 **Choose Local Ecotypes Of Native Plants and Appropriate Erosion-Control Seed Mixes**	Whenever native species are prescribed for installation the following steps will be taken by a qualified biologist or vegetation specialist: 1. Evaluate whether the plant species currently grows wild in Santa Clara County; and, 2. If so, the qualified biologist or vegetation specialist will determine if any need to be local natives, i.e. grown from propagules collected in the same or adjacent watershed, and as close to the project site as feasible. Also, consult a qualified biologist or vegetation specialist to determine which seeding option is ecologically appropriate and effective, specifically: 1. For areas that are disturbed, an erosion control seed mix may be used consistent with the SCVWD *Guidelines and Standards for Land Use Near Streams, Design Guide 5, 'Temporary Erosion Control Options.'*

Biological Resources

	2. In areas with remnant native plants, the qualified biologist or vegetation specialist may choose an abiotic application instead, such as an erosion control blanket or seedless hydro-mulch and tackifier to facilitate passive revegetation of local native species. 3. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable. 4. If a gravel or wood mulch has been used to prevent soil compaction, this material may be left in place [if ecologically appropriate] instead of seeding. Seed selection shall be ecologically appropriate as determined by a qualified biologist, per *Guidelines and Standards for Land Use Near Streams, Design Guide 2: Use of Local Native Species*.
BI-9 **Restore Riffle/Pool Configuration of Channel Bottom**	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible. In salmonid streams, restore pool and riffle configurations to emulate pre-project instream conditions, taking into account channel morphological features (i.e. slope), which affects riffle/pool sequence.
BI-10 **Avoid Animal Entry and Entrapment**	All pipes, hoses, or similar structures less than 12 inches diameter will be closed or covered to prevent animal entry. All construction pipes, culverts, or similar structures, greater than 2-inches diameter, stored at a construction site overnight, will be inspected thoroughly for wildlife by a qualified biologist or properly trained construction personnel before the pipe is buried, capped, used, or moved. If inspection indicates presence of sensitive or state- or federally-listed species inside stored materials or equipment, work on those materials will cease until a qualified biologist determines the appropriate course of action. To prevent entrapment of animals, all excavations, steep-walled holes or trenches more than 6-inches deep will be secured against animal entry at the close of each day. Any of the following measures may be employed, depending on the size of the hole and method feasibility: 1. Hole to be securely covered (no gaps) with plywood, or similar materials, at the close of each working day, or any time the opening will be left unattended for more than one hour; or 2. In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 15 feet apart; or 3. In situations where escape ramps are infeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry.

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Biological Resources

BI-11 **Minimize Predator-Attraction**	Remove trash daily from the worksite to avoid attracting potential predators to the site.

Cultural Resources

CU-1 **Accidental Discovery of Archaeological Artifacts or Burial Remains**	If historical or unique archaeological artifacts are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Work at the location of the find will halt immediately within 30 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone. A Consulting Archaeologist will visit the discovery site as soon as practicable for identification and evaluation pursuant to Section 21083.2 of the Public Resources Code and Section 15126.4 of the California Code of Regulations. If the archaeologist determines that the artifact is not significant, construction may resume. If the archaeologist determines that the artifact is significant, the archaeologist will determine if the artifact can be avoided and, if so, will detail avoidance procedures. If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines. If burial finds are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Upon discovering any burial site as evidenced by human skeletal remains, the County Coroner will be immediately notified and the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. No further excavation or disturbance within 30 feet of the site or any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the County Coroner, California Native American Heritage Commission, and/or the County Coordinator of Indian Affairs.

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Hazards & Hazardous Materials

The District's projects and operations often require exposure to, and the use of, potentially hazardous materials. The BMPs listed in this section reflect the District's standard procedures for their handling and use. Pesticides are one tool for pest control on district properties and facilities. The most common pesticide use is herbicide application to manage vegetation. Insecticides and rodenticides are used infrequently and in small quantities. All BMPs associated with pesticide use comply with, Q751D02, *Control and Oversight of Pesticide Use*. ISO document **Q751D02** defines District policies and procedures for pesticide use and reporting. The policies and procedures specified therein apply to all District-owned or operated facilities, as well as to pesticide use by staff, contractors, permittees, and suppliers. It is the District policy to minimize the environmental risk, and exposure, resulting from its pesticide use, by employing alternatives to the maximum extent practicable. To assure avoidance and minimization of impacts from the use of pesticides, all proposed pesticide applications must be reviewed by the District's Pest Control Adviser, who is responsible for coordinating, reviewing, tracking, documenting and reporting pest control practices at the District.

HM-1 **Comply with All Pesticide Application Restrictions and Policies**	Pesticide products are to be used only after an assessment has been made regarding environmental, economic, and public health aspects of each of the alternatives by the District's Pest Control Advisor (PCA). All pesticide use will be consistent with approved product specifications. Applications will be made by, or under the direct supervision of, State Certified applicators under the direction of, or in a manner approved by the PCA. Refer to Q751D02, *Control and Oversight of Pesticide Use*.
HM-2 **Minimize Use of Pesticides**	In all cases, where some form of pest control is deemed necessary by the PCA; evaluate alternative pest control methods and pesticides. Refer to Q751D02: *Control and Oversight of Pesticide Use*.
HM-3 **Post Areas Where Pesticides Will Be Used**	Posting of areas where pesticides are to be used shall be performed in compliance with Q751D02: *Control and Oversight of Pesticide Use.* Posting shall be performed in compliance with the label requirements of the product being applied. In addition, the District shall provide posting for **any** products applied in areas used by the public for recreational purposes, and areas readily accessible to the public, regardless of whether the label requires such notification (the posting method may be modified to avoid destruction of bait stations or scattering of rodenticide), including: 1. Sign postings shall notify staff and the general public of the date and time of application; the product's active ingredients, and common name; and, the time of allowable re-entry into the treated area. 2. A District staff contact phone number shall be posted on the sign. 3. Signs shall not be removed until after the end of the specified re-entry interval. 4. Right-to-know literature on the product shall be made available upon request to anyone in the area. 5. Notification will take into account neighbors with specific needs prior to treatment of an adjacent area to ensure such needs are met. Such requests are maintained by the District under Q751D02.

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Hazards & Hazardous Materials

HM-4 **Comply with All Pesticide Usage Requirements**	All projects that propose ongoing use of pesticides will comply with all provisions of Q751D02: *Control and Oversight of Pesticide Use*, including, but not necessarily limited to the following: 1. All pest control methods will be performed only after a written Pest Control Recommendation for use has been prepared by the District's PCA in accordance with requirements of the California Food and Agricultural Code. 2. F751D01 – *Pest Control Recommendation & Spray Operators Report* will be completed for each pesticide application.
HM-5 **Comply with Restrictions on Herbicide Use in Upland Areas**	Consistent with provisions of Q751D02: *Control and Oversight of Pesticide Use,* application of pre emergence (residual) herbicides to upland areas will not be made within 72 hours of predicted significant rainfall. Predicted significant rainfall for the purposes of this BMP will be described as local rainfall greater than 0.5 inch in a 24-hour period with greater than a 50% probability of precipitation according to the National Weather Service.
HM-6 **Comply with Restrictions on Herbicide Use in Aquatic Areas**	Consistent with provisions of Q751D02: *Control and Oversight of Pesticide Use,* only herbicides and surfactants registered for aquatic use will be applied within the banks of channels within 20 feet of any water present. Furthermore, aquatic herbicide use will be limited to June 15th through October 31st with an extension through December 31 or until the first occurrence of any of the following conditions; whichever happens first: 1. local rainfall greater than 0.5 inches is forecasted within a 24-hour period from planned application events according to the National Weather Service; or 2. when steelhead begin upmigrating and spawning in the 14 steelhead creeks, as determined by a qualified biologist (typically in November/December). If rain is forecast then application of aquatic herbicide will be rescheduled.
HM-7 **Restrict Vehicle and Equipment Cleaning to Appropriate Locations**	Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites.

Hazards & Hazardous Materials

HM-8 **Ensure Proper Vehicle and Equipment Fueling and Maintenance**	No fueling or servicing will be done in a waterway or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators). 1. For stationary equipment that must be fueled or serviced on-site, containment will be provided in such a manner that any accidental spill will not be able to come in direct contact with soil, surface water, or the storm drainage system. 2. All fueling or servicing done at the job site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation. 3. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. 4. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use. 5. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a channel or flood plain.
HM-9 **Ensure Proper Hazardous Materials Management**	Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means. 1. Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered. 2. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage. 3. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. 4. All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. 5. Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110% of the primary container(s). 6. The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable State and federal regulations. 7. In the event of any hazardous material emergencies or spills, personnel will call the Chemical Emergencies/Spills Hotline at 1-800-510-5151.

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Hazards & Hazardous Materials

HM-10 **Utilize Spill Prevention Measures**	Prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water following these measures: 1. Field personnel will be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills; 2. Equipment and materials for cleanup of spills will be available on site, and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements; 3. Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means; 4. Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations), and all field personnel will be advised of these locations; and, 5. The work site will be routinely inspected to verify that spill prevention and response measures are properly implemented and maintained.
HM-11 **Ensure Worker Safety in Areas with High Mercury Levels**	To ensure worker safety is protected in areas with elevated mercury concentrations in exposed surfaces, personal protective equipment will be required during project construction to maintain exposure below levels established by the California Division of Occupational Safety and Health (Cal/OSHA).
HM-12 **Incorporate Fire Prevention Measures**	1. All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. 2. During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site. 3. An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring. 4. Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals or vegetation.
HM-13 **Avoid Impacts from Naturally Occurring Asbestos**	The District will comply with and implement BAAQMD dust control measures and notification requirements when working in serpentine soils.

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Hydrology/Water Quality

The District's projects and operations often pose situations that warrant standard measures to avoid or minimize impacts to water quality. As of this Handbook revision (G), the following best management practices represent measures currently used by the District; however, since many of these measures are based on industry standards for stormwater management maintained by the California Stormwater Quality Association (**CASQA**), the selection of appropriate BMPs from this list **must be verified** by comparison with the most current standards found on the CASQA website.

WQ-1 **Conduct Work from Top of Bank**	For work activities that will occur in the channel, work will be conducted from the top of the bank if access is available and there are flows in the channel.
WQ-2 **Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms**	Field personnel will use the appropriate equipment for the job that minimizes disturbance to the stream bottom. Appropriately tired vehicles, either tracked or wheeled, will be used depending on the situation. Tracked vehicles (bulldozers, loaders) may cause scarification. Wheeled vehicles may cause compaction. Heavy equipment will not operate in the live stream.
WQ-3 **Limit Impact of Pump and Generator Operation and Maintenance**	Pumps and generators will be maintained and operated in a manner that minimizes impacts to water quality and aquatic species. 1. Pumps and generators will be maintained according to manufacturers' specifications to regulate flows to prevent dry-back or washout conditions. 2. Pumps will be operated and monitored to prevent low water conditions, which could pump muddy bottom water, or high water conditions, which creates ponding. 3. Pump intakes will be screened to prevent uptake of fish and other vertebrates. Pumps in steelhead creeks will be screened according to NMFS criteria. 4. Sufficient back-up pumps and generators will be onsite to replace defective or damaged pumps and generators.
WQ-4 **Limit Impacts From Staging and Stockpiling Materials**	1. To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials (e.g., road rock and project spoil) will be contained within the existing service roads, paved roads, or other pre-determined staging areas. 2. Building materials and other project-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies or storm drains. 3. No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens). 4. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited. 5. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control.

Hydrology/Water Quality

	During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers.
WQ-5 **Stabilize Construction Entrances and Exits**	Measures will be implemented to minimize soil from being tracked onto streets near work sites: 1. Methods used to prevent mud from being tracked out of work sites onto roadways include installing a layer of geotextile mat, followed by a 4-inch thick layer of 1 to 3-inch diameter gravel on unsurfaced access roads. 2. Access will be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the water body bed and banks, and the surrounding land uses.
WQ-6 **Limit Impact of Concrete Near Waterways**	Concrete that has not been cured is alkaline and can increase the pH of the water; fresh concrete will be isolated until it no longer poses a threat to water quality using the following appropriate measures: 1. Wet sacked concrete will be excluded from the wetted channel for a period of four weeks after installation. During that time, the wet sacked concrete will be kept moist (such as covering with wet carpet) and runoff from the wet sacked concrete will not be allowed to enter a live stream. 2. 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. 3. Dry sacked concrete will not be used in any channel. 4. An area outside of the channel and floodplain will be designated to clean out concrete transit vehicles.

Hydrology/Water Quality

WQ-7 **Isolate Work in Tidal Areas With Use of Coffer Dam**	For work in tidal areas, It is preferable to isolate one side of the channel with a cofferdam and allow flows to continue on the other side of the creek. If downstream flows cannot be diverted around the project site, the creek waters will be transmitted around the site through cofferdam bypass pipes. By isolating the work area from tidal flows, water quality impacts are minimized. 1. Installation of coffer dams will begin at low tide. 2. Waters discharged through tidal coffer dam bypass pipes will not exceed 10 percent in areas where natural turbidity is greater than 50 NTU over the background levels of the tidal waters into which they are discharged. 3. Coffer dams in tidal areas may be made from earthen or gravel material. If earth is used, the downstream and upstream faces will be covered by a protected covering (e.g., plastic or fabric) and anchored to minimize erosion. 4. Cofferdams and bypass pipes will be removed as soon as possible but no more than 72 hours after work is completed. Flows will be restored at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat.
WQ-8 **Minimize Hardscape in Bank Protection Design**	Bank repair techniques appropriate to a given site based on hydraulic and other site conditions will be selected. 1. Biotechnical repair methods include construction with living materials; willow wattling; erosion control blankets; brush matting; and, installation of root wads and boulders in banks. 2. The repair will be designed and installed so that it will be self-sustaining and use vegetation that adds structural integrity to the stream bank.
WQ-9 **Use Seeding for Erosion Control, Weed Suppression, and Site Improvement**	Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. An erosion control seed mix will be applied to exposed soils down to the ordinary high water mark in streams. 1. The seed mix should consist of California native grasses, (for example *Hordeum brachyantherum*; *Elymus glaucus*; and annual *Vulpia microstachyes*) or annual, sterile hybrid seed mix (e.g., *Regreen*™, a wheat x wheatgrass hybrid). 2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place.
WQ-10 **Prevent Scour Downstream of Sediment Removal**	After sediment removal, the channel will be graded so that the transition between the existing channel both upstream and downstream of the work area is smooth, and continuous between the maintained and non-maintained areas, and does not present a sudden vertical transition (wall of sediment) or other blockage that could erode once flows are restored to the channel.

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Hydrology/Water Quality

WQ-11 **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.

WQ-12

Manage Well or Exploratory Boring Materials	All materials or waters generated during drilling, well or exploratory boring construction, well development, pump testing, or other activities associated with wells or exploratory borings, will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case will these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways. Such materials/waters must not be allowed to move off the property where the work is being completed.
WQ-13 **Protect Groundwater from Contaminates Via Wells or Exploratory Borings**	Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality. Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants.
WQ-14 **Backfill Completed Exploratory Borings**	All borings should be backfilled within 24 hours of termination of testing. Borings will not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings will be secured such that they do not endanger public health. All borings must be properly destroyed by backfilling with acceptable sealing materials. Acceptable sealing materials are: 1. 27 sack neat cement (four 94-pound bags/55-gallon drum), 2. 10 sack cement sand grout, or 3. hydrated high solids 20 percent bentonite slurry. No soil cuttings may be used for backfilling boreholes. No bentonite chips or pellets may be used to backfill borings. Free fall of sealing material will not be allowed if greater than 30 feet or if more than 3 feet of standing water exists in borehole. A tremie pipe must be used to place the cement sealing material if exploratory boring is over 30 feet deep or if more than 3 feet of standing water exists in borehole. Exploratory borings located in Geologic Setting Zone 4 (bedrock) may be backfilled with borehole cuttings from total depth of the boring up to a depth of 50 feet from the surface grade. The top 50 feet of the borehole must

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	be backfilled with above described sealing materials.
WQ-15 **Prevent Water Pollution**	Oily, greasy, or sediment laden substances or other material that originate from the project operations and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife will not be allowed to enter, or be placed where they may later enter, any waterway. The project will not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity as follows: 1. where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases will not exceed 5 percent; 2. where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent; 3. where the receiving water body is a dry creek bed or storm drain, waters in excess of 50 NTU will not be discharged from the project. Water turbidity changes will be monitored. The discharge water measurements will be made at the point where the discharge water exits the water control system for tidal sites and 100 feet downstream of the discharge point for non-tidal sites. Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site. Natural watercourse turbidity measurements will be made prior to initiation of project discharges, preferably at least 2 days prior to commencement of operations.
WQ-16 **Prevent Stormwater Pollution**	To prevent stormwater pollution, the applicable measures from the following list will be implemented: 1. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. In creeks, the channel bed and areas below the Ordinary High Water Mark are exempt from this BMP. 2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special-status species would be impacted by the application. 3. Erosion control measures will be installed according to manufacturer's specifications. 4. To prevent stormwater pollution, the appropriate measures from, but not limited to, the following list will be implemented: • Silt Fences • Straw Bale Barriers • Brush or Rock Filters • Storm Drain Inlet Protection • Sediment Traps or Sediment Basins • Erosion Control Blankets and/or Mats

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	• Soil Stabilization (i.e. tackified straw with seed, jute or geotextile blankets, etc.) • Straw mulch. 5. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences). 6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation.
WQ-17 **Manage Sanitary and Septic Waste**	Temporary sanitary facilities will be located on jobs that last multiple days, in compliance with California Division of Occupational Safety and Health (Cal/OSHA) regulation 8 California Code of Regulations 1526. All temporary sanitary facilities will be located where overflow or spillage will not enter a watercourse directly (overbank) or indirectly (through a storm drain).

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Transportation/Traffic

TR-1 **Incorporate Public Safety Measures**	Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.

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Bank Protection BMP Suite

AQ-1 Use Dust Control Measures
BI-1 Avoid Relocating Mitten Crabs
BI-2 Minimize Impacts to Steelhead
BI-3 Remove Temporary Fills
BI-5 Avoid Impacts to Nesting Migratory Birds
BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction
CU-1 Accidental Discovery of Archaeological Artifacts or Burial Finds
HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
HM-11 Ensure Worker Safety in Areas with High Mercury Levels
HM-12 Incorporate Fire Prevention Measures
WQ-1 Conduct Work from Top of Bank
WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
WQ-3 Limit Impact of Pump and Generator Operation and Maintenance
WQ-4 Limit Impacts from Staging and Stockpiling Materials
WQ-5 Stabilize Construction Entrances and Exits
WQ-6 Limit Impact of Concrete Near Waterways
WQ-7 Isolate Work in Tidal Areas with Use of Coffer Dam
WQ-8 Minimize Hardscape in Bank Protection Design
WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
WQ-10 Prevent Scour Downstream of Sediment Removal
WQ-11 Maintain Clean Conditions at Work Sites
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste
TR-1 Use Suitable Public Safety Measures

Stormwater Management BMP Suite

AQ-1 Use Dust Control Measures
BI-3 Remove Temporary Fills
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
WQ-1 Conduct Work from Top of Bank
WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
WQ-3 Limit Impact of Pump and Generator Operation and Maintenance
WQ-4 Limit Impacts From Staging and Stockpiling Materials
WQ-5 Stabilize Construction Entrances and Exits
WQ-6 Limit Impact of Concrete Near Waterways
WQ-7 Isolate Work in Tidal Areas with Use of Coffer Dam
WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
WQ-10 Prevent Scour Downstream of Sediment Removal
WQ-11 Maintain Clean Conditions at Work Sites
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste

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Discharge Activities BMP Suite

BI-2 Minimize Impacts to Steelhead
BI-5 Avoid Impacts to Nesting Migratory Birds
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
WQ-3 Limit Impact of Pump and Generator Operation and Maintenance
WQ-5 Stabilize Construction Entrances and Exits
WQ-7 Isolate Work in Tidal Areas With Use of Coffer Dam
WQ-11 Maintain Clean Conditions at Work Sites
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste
TR-1 Use Suitable Public Safety Measures

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Grading and Excavation BMP Suite

AQ-1 Use Dust Control Measures
AQ-2 Avoid Stockpiling Odorous Materials
BI-2 Minimize Impacts to Steelhead
BI-3 Remove Temporary Fills
BI-5 Avoid Impacts to Nesting Migratory Birds
BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction
CU-1 Accidental Discovery of Archaeological Artifacts or Burial Finds
HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
HM-11 Ensure Worker Safety in Areas with High Mercury Levels
HM-12 Incorporate Fire Prevention Measures
WQ-1 Conduct Work from Top of Bank
WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
WQ-4 Limit Impacts From Staging and Stockpiling Materials
WQ-5 Stabilize Construction Entrances and Exits
WQ-7 Isolate Work in Tidal Areas With Use of Coffer Dam
WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
WQ-11 Maintain Clean Conditions at Work Sites
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste
TR-1 Use Suitable Public Safety Measures

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Sediment Removal and Storage BMP Suite

AQ-1 Use Dust Control Measures
AQ-2 Avoid Stockpiling Potentially Odorous Materials
BI-1 Avoid Relocating Mitten Crabs
BI-2 Minimize Impacts to Steelhead
BI-3 Remove Temporary Fills
BI-5 Avoid Impacts to Nesting Migratory Birds
BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction
HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
HM-11 Ensure Worker Safety in Areas with High Mercury Levels
WQ-1 Conduct Work from Top of Bank
WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
WQ-3 Limit Impact of Pump and Generator Operation and Maintenance
WQ-4 Limit Impacts from Staging and Stockpiling Materials
WQ-5 Stabilize Construction Entrances and Exits
WQ-7 Isolate Work in Tidal Areas with Use of Coffer Dam
WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
WQ-10 Prevent Scour Downstream of Sediment Removal
WQ-11 Maintain Clean Conditions at Work Sites
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste
TR-1 Use Suitable Public Safety Measures

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Vegetation Management and Removal BMP Suite

BI-2 Minimize Impacts to Steelhead
BI-4 Minimize Adverse Effects of Pesticides on Non-target Species
BI-5 Avoid Impacts to Nesting Migratory Birds
BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction
BI-7 Minimize Impacts to Vegetation from Survey Work
HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
WQ-1 Conduct Work from Top of Bank
WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
WQ-5 Stabilize Construction Entrances and Exits
WQ-8 Minimize Hardscape in Bank Protection Design
WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement e
WQ-11 Maintain Clean Conditions at Work Sites
WQ-17 Manage Sanitary and Septic Waste
TR-1 Use Suitable Public Safety Measures

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Well and Exploratory Boring Construction, Modification, or Destruction BMP Suite

AQ-1 Use Dust Control Measures
BI-5 Avoid Impacts to Nesting Migratory Birds
HM-9 Clean Vehicles and Equipment
HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
HM-9 Ensure Proper Hazardous Materials Management
HM-10 Utilize Spill Prevention Measures
HM-12 Incorporate Fire Prevention Measures
WQ-4 Limit Impacts from Staging and Stockpiling Materials
WQ-11 Maintain Clean Conditions at Work Sites
WQ-12 Manage Well or Exploratory Boring Materials
WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings
WQ-14 Backfill Completed Exploratory Borings
WQ-15 Prevent Water Pollution
WQ-16 Prevent Stormwater Pollution
WQ-17 Manage Sanitary and Septic Waste
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TR-1 Use Suitable Public Safety Measures

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California Environmental Quality Act (CEQA) (http://ceres.ca.gov/ceqa/)

Q520D01 – Environmental Management System Environmental Planning (Sections 1 – 5)

Q751D02 – Pesticide Use (On District QEMS)

Best Management Practices

A. SECTION A –Pre-Project Planning and General BMPs

General BMPs are applicable program-wide, for most routine SMP maintenance activities. These measures include standard construction practices and impact avoidance measures that will minimize potential environmental impacts. These BMPs will be implemented by the stream maintenance crew, as appropriate and as overseen by site managers, for all activities associated with the maintenance program. The majority of these BMPs are implemented prior to and during maintenance operations, though the level of activity varies depending on the work type.

Other General BMPs are conducted prior to implementing maintenance activities on site. This group of measures includes procedures to identify site or maintenance constraints, such as biological or cultural resource surveys which coincide with permit compliance requirements. Site design constraints for sediment and bank stabilization activities in particular are also identified as part of the pre-project planning process.

BMP Number	BMP Title	BMP Description
GEN-1	In-Channel Work Window	All ground-disturbing maintenance activities (i.e., sediment removal, bank stabilization, tree removal, and mechanized vegetation management) occurring in the channel (below bankfull) will take place between June 15 and October 15. Requests for work window extensions must be submitted to the regulatory agencies by October 1st, listing the creek names and reaches where a work extension will occur. Work extensions vary per work activity. The agencies will provide a single response within one week. Significant rainfall applies after October 15. An extension through December 31 may apply if the following requirements are met and regulatory agency approval is received: For ground-disturbing activities: ▪ Work may continue if no significant rainfall, defined as greater than 0.5 inches per 24 hours within a local watershed, is either forecasted[1] or observed. Following October 15th, maintenance work shall cease for the season if such a rain event is forecasted or observed. ▪ In the Pajaro Basin, winterized sites will be visually inspected prior to, and within 48 hours following, each significant rain event (defined as rainfall 0.5 inch or greater within a 24-hour period in the subject watershed) to ensure that winterization measures are properly implemented and maintained. Sediment removal ▪ Extended Work Window: 1. Creeks supporting anadromous fish: An extended work window may occur from October 15 through October 31, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first. 2. Creeks not supporting anadromous fish: An extended work window may occur from October 15 through November 30th, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first. ▪ Extended Work Window in Lower Quality Areas:

[1] Weather Forecasts. No phase of the project may be started if that phase and its associated erosion control measures cannot be completed prior to the onset of a storm event if that construction phase may cause the introduction of sediments into the stream. Seventy-two-hour weather forecasts from the National Weather Service or other localized and more detailed weather forecast service will be consulted prior to start up of any phase of the project that may result in sediment runoff to a stream.

BMP Number	BMP Title	BMP Description
		1. Sediment removal work may occur until December 31. 2. Work will only occur on Berryessa Creek (0-88+80; 232+70-236+00; 284+30-288+00), Lower Silver Creek (Reach 3 between Stations 37+40 and 381+19), Thompson Creek (0+00-10+00), Canoas Creek (0+00-390+00), Ross Creek (0+00-86+30), Calabazas Creek (35+00-105+00), and San Tomas Aquino Creek (80+00-100+00) with the following conditions: o site conditions are dry and access for all construction equipment and vehicles will not impact waterways; and o all work will stop if any rainfall is forecast for the next 72 hour period. 3. Work may occur after a significant rainfall event but no later than December 31. 4. Sites must be maintained in a rapidly winterizable[2] state (implement control measures BMP GEN-20). Bank stabilization projects may continue until the approved date stated below. Prior to a forecasted significant rainfall event (0.5 in/24 hrs), all incomplete bank stabilization projects must be winterized. 1. In Creeks Supporting Anadromous Fish o An extended work window may occur until October 31st for bank stabilization projects that will be 50% complete by October 15th. 2. In Creeks Not Supporting Anadromous Fish o An extended work window may occur until November 30th for projects that will be 50% complete by October 15th or until significant rainfall. o An extended work window may occur until November 30th for new bank stabilization projects that will be completed in five (5) days or less, or until significant rainfall. ▪ Instream hand pruning and hand removal of vegetation will occur year round, except when: o Wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel; or o Work occurs in streams that support steelhead. In these streams instream vegetation maintenance will cease on December 31 or when local rainfall greater than 0.5 inches is predicted within a 24-hour period of planned activities, whichever happens first. Modification and removal of instream large woody debris will occur at any time of the year, and as further described in the NMFS Biological Opinion.
GEN-2	Instream Herbicide Application Work Window	Instream herbicide applications will take place between June 15 and October 15, or until the first occurrence of any of the following conditions; whichever happens first: ▪ local rainfall greater than 0.5 inches is forecasted within a 24-hour period from planned application events; or ▪ when steelhead begin upmigrating and spawning in the 14 anadromous steelhead creeks, as determined by a qualified biologist (typically in November/December), o A qualified biologist will determine presence/absence of sensitive resources in designated herbicide use areas and develop site-specific control methods (including the use of approved herbicide and surfactants). Proposed herbicide use would be limited to the aquatic formulation of glyphosate (Rodeo or equal). Surfactant use would be limited to non-ionic products, such as Agri-

[2] Winterization is the process to maintain work sites with the appropriate BMP's to prevent erosion, sediment transport, and protect water quality. Winterization occurs upon completion of bank repairs or on incomplete projects after October 15 and prior to the forecast of significant rainfall, 0.5 inches or greater of local watershed rainfall within 24 hours. Winterization shall be completed prior to the occurrence of such actual significant rainfall.

BMP Number	BMP Title	BMP Description
		dex, Competitor, or another brand name using the same ingredients. Any modifications to these materials would require review and approval by NMFS and CDFW. o A qualified fisheries biologist will review proposed herbicide application methods and stream reaches. The fisheries biologist would conduct a pre-construction survey (and any other appropriate data research) to determine whether the proposed herbicide application is consistent with SMP approvals concerning biological resources and determine which BMPs would be instituted for work to proceed. In addition, herbicide application requirements are as follows: ▪ no direct application into water; ▪ herbicide application shall not occur when wind conditions may result in drift; ▪ herbicide solution shall be applied only until there is a "wet" appearance on the target plants in order to avoid run off; and ▪ where permitted, surfactants shall be added to the spray solution prior to application.
GEN-3	Avoid Exposing Soils with High Mercury Levels	Sediment removal and bank stabilization projects in portions of the Guadalupe River watershed affected by historic mercury mining may expose soils containing mercury. 1. In Basin Plan identified creeks in the Guadalupe River Basin, soils that are likely to be disturbed or excavated shall be tested for mercury (Hg). Soils shall be remediated if disturbed or excavated soils exposed to streamflow have a residual sample test exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median). 2. Remediation may be accomplished either by: a. treating the site so that contaminated soils excavated for the purpose of bank stabilization shall not be susceptible to erosion; or b. further excavating contaminated soils and replacing them with clean fill or other bank stabilization materials that are free from contaminants. c. Soils with residual sample mercury concentrations exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median) shall be removed and disposed of in a Class I landfill following established work practices and hazard control measures. Soils with residual sample mercury concentrations less than 0.2 mg mercury per kg erodible sediment (dry wt., median) will remain at the project site. 3. To ensure worker safety during sediment removal and bank stabilization projects with elevated mercury concentrations in the exposed surfaces, personal protective equipment will be required during project construction to maintain exposure below levels established by the Occupational Safety and Health Agency (OSHA).

Biological Resources

GEN-4	Minimize the Area of Disturbance	To minimize impacts to natural resources, soil disturbance will be kept to the minimum footprint necessary to complete the maintenance operation.
GEN-5	Mitten Crab Control Measure	Sediment from the San Francisco Bay Watershed, including that for reuse, cannot be moved to areas any farther south than Coyote Creek Golf Drive in south San Jose, and the intersection of McKean and Casa Loma Roads.
GEN-6	Minimize Impacts to Nesting Birds via Site	1. For activities occurring between January 15 and August 31, project areas will be checked by a qualified biologist or Designated Individuals (DI – for limited ground nesting species surveys) for nesting birds within 2

BMP Number	BMP Title	BMP Description
	Assessments and Avoidance Measures	weeks prior to starting work. If a lapse in project-related work of 2 weeks or longer occurs, another focused survey will be conducted before project work can be reinitiated. 2. If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors and the least Bell's vireo, herons, and egrets; 25 feet for ground-nesting non-raptors; 700 feet for the California clapper rail; 600 feet for the California least tern and western snowy plover; and 50 feet for non-raptors nesting on trees, shrubs and structures. Mowing and weed whacking will have a 25 feet buffer. A qualified biologist may identify an alternative buffer based on a site specific-evaluation. No work within the buffer will occur without written approval from a qualified biologist, for as long as the nest is active. 3. All vegetation management, sediment reuse, road grading, or other SMP activities in or immediately adjacent to suitable California clapper rail or Alameda song sparrow nesting habitat, as determined by a qualified biologist, shall not be conducted prior to September 1 (the non-nesting season). 4. If a pre-activity survey in high-quality San Francisco common yellowthroat breeding habitat (as determined by a qualified biologist) identifies more singing male San Francisco common yellowthroats than active nests, then the inconspicuous nests of this species might have been missed. In that case, maintenance activities in that area shall be delayed until the San Francisco common yellowthroat non-breeding season (i.e., August 16–March 14). 5. The boundary of each buffer zone will be marked with fencing, flagging, or other easily identifiable marking if work will occur immediately outside the buffer zone. 6. All protective buffer zones will be maintained until the nest becomes inactive, as determined by a qualified biologist. 7. If monitoring shows that disturbance to actively nesting birds is occurring, buffer widths will be increased until monitoring shows that disturbance is no longer occurring. If this is not possible, work will cease in the area until young have fledged and the nest is no longer active.
GEN-6.5	Protection of Nesting Least Bell's Vireos	1. To the extent feasible, SMP activities within those areas mapped as vireo habitat in the Santa Clara Valley Habitat Plan shall be scheduled to occur outside of the least Bell's vireo nesting season (March 15 – July 31). If it is not feasible for maintenance activities along these reaches to be scheduled during the non-nesting season, the following measures will be implemented. 2. For activities within woody riparian habitat mapped as vireo habitat in the Santa Clara Valley Habitat Plan that will occur between March 15 and July 31, any work will be preceded by a focused survey for least Bell's vireos. Pre-activity surveys will consist of two site visits, conducted on separate days within 14 days before the initiation of maintenance activities in the given area, with at least one of these surveys occurring within 5 calendar days before the initiation of such activities. Surveys will be conducted between dawn and 11:00 a.m., during mild weather conditions (i.e., not during excessive cold, heat, wind, or rain), within all riparian habitat in and within 250 feet of any proposed maintenance location along these reaches. The surveys will be conducted by a qualified biologist who is familiar with the visual and auditory identification of this species. 3. To minimize impacts to nesting least Bell's vireos and other birds, the biologist will not initially be looking for Bell's vireo nests during these surveys. Rather the biologist will look and listen for individual vireos. If a least Bell's vireo is detected, it will be observed to determine whether it is actively nesting. The biologist will note the nest location, or if finding the actual nest could result in excessive disturbance or risk damaging the nest, the biologist will determine the approximate location, based on observation of birds carrying nesting material,

BMP Number	BMP Title	BMP Description
		carrying food, or repeatedly visiting a certain area. 4. If an active nest is found, a minimum 250-foot no-activity buffer will be established around the nest. If a territorial male is found but no nest can be detected, then the approximate centroid of the bird's area of activity will be the point from which the buffer will be applied. The required buffer may be reduced in areas where dense riparian forest occurs between the construction activities and the active nest or where sufficient barriers or topographic relief exists to protect the nest from excessive noise or other disturbance. The biologist will coordinate with the USFWS and CDFW to evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis. 5. No work will occur within the buffer without verification by a biologist that the nest is inactive and until any fledged young are no longer dependent on adults for food. 6. If a least Bell's vireo and/or its nest is detected during pre-activity surveys, the District will contact the USFWS and CDFG within two working days regarding the presence and location of the bird/nest.
GEN-7	Protection of Burrowing Owls	1. If occupied burrows are identified, a 250 foot radius no work buffer zone will be established around the burrow. The buffer may be modified, with CDFW approval, to take into consideration of paved roads, intervening riparian corridors and levees. 2. No construction work will occur within the 250 foot buffer zone until after the nesting season. 3. After the nesting season work may occur within the 250 foot buffer zone provided: a. A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction) b. The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities. c. If there is any change in owl foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. d. If the owls are gone for at least one week, the project proponent may request approval from the Santa Clara County Habitat Agency that a qualified biologist excavate the usable burrows to prevent owls from re-occupying the site. After the usable burrows are excavated, the buffer zone will be removed and construction may continue. e. Monitoring must continue as described above for the non-breeding season as long as the burrow remains active. 5. Routine use of existing District maintenance roads within the 250 foot buffer will be allowed. However, no construction traffic will be allowed to use the maintenance road during the active nesting period. 6. Exceptions. a. Mowing on levees may occur during the nesting season and within 250 feet of active burrows provided the burrows are marked by a qualified biologist. b. No vehicle mounted mowers will be used within 10 ft of occupied burrows. c. A qualified biologist will monitor the mowing within the buffer zone and stop the mowing if burrowing owls are observed on the surface at the nest or another burrow. d. Areas within 10 feet of the burrows may be mowed using hand equipment when no owls are visible on the surface. e. All mowing activities within the buffer zone will be completed within 30 minutes.
GEN-8	Protection of Sensitive	Approved herbicides and adjuvants may be applied in habitat areas for sensitive wildlife species (including

BMP Number	BMP Title	BMP Description
	Fauna Species from Herbicide Use	steelhead, California red-legged frog, California tiger salamander, salt marsh harvest mouse, and Bay checkerspot butterfly); all applications will occur in accordance with federal and state regulations. For sprayable or dust formulations: when the air is calm or moving away from sensitive wildlife habitat, applications will commence on the side nearest the habitat and proceed away from the habitat. When air currents are moving toward habitat, applications will not be made within 200 yards by air or 40 yards by ground upwind from occupied habitat. However, these distances may be modified for the control of invasive species on salmonid streams if the following measures are implemented: ▪ A qualified biologist will determine presence/absence of sensitive resources in designated herbicide use areas and develop site-specific control methods (including the use of approved herbicide and surfactants). Proposed herbicide use would be limited to the aquatic formulation of glyphosate (Rodeo or equal). Surfactant use would be limited to non-ionic products, such as Agri-dex, Competitor, or another brand name using the same ingredients. Any modifications to these materials would require review and approval by NMFS and CDFW. ▪ A qualified fisheries biologist will review proposed herbicide application methods and stream reaches. The fisheries biologist would conduct a pre-construction survey (and any other appropriate data research) to determine whether the proposed herbicide application is consistent with SMP approvals concerning biological resources and determine which BMPs would be instituted for work to proceed.
GEN-9	Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities	A qualified botanist will identify special status plant species and sensitive natural vegetation communities and clearly map or delineate them as needed in order to avoid and/or minimize disturbance, using the CDFW protocols and the *CNPS Botanical Survey Guidelines* to formulate the following protocols: 1. A qualified botanist will use the GIS database, CNDDB, and/or other suitable tools to identify special status plants and sensitive natural vegetation communities located within or near work areas. 2. Surveys of areas identified as sensitive natural communities or suitable habitat for special status plant species will be conducted by a qualified botanist prior to commencement of work. 3. Surveys will be conducted during the appropriate time of the year to adequately identify special-status plants that could occur on the site of proposed maintenance activities. 4. The qualified botanist will ensure avoidance and/or minimize impacts by implementing one or more of the following, as appropriate, per the botanist's recommendation: a) Flag or otherwise delineate in the field the special status plant populations and/or sensitive natural community to be protected; b) Allow adequate buffers around plants or habitat; the location of the buffer zone will be shown on the maintenance design drawings and marked in the field with stakes and/or flagging in such a way that exclusion zones are visible to maintenance personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). c) Time construction or other activities during dormant and/or non-critical life cycle period; d) Store removed sediment off site; and e) Limit the operation of maintenance equipment to established roads whenever possible. 5. No herbicides, terrestrial or aquatic, will be used in areas identified as potential habitat for special status plants species or containing sensitive natural communities, until a qualified botanist has surveyed the area and determined the locations of special status plant species present. 6. If special status plant species or sensitive communities are present, then a qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative

BMP Number	BMP Title	BMP Description
		strategies based on the botanist's recommendations will be coordinated with appropriate staff. 7. All impacts to sensitive natural communities and special status plants identified by the qualified botanist will be avoided and/or minimized
GEN-10	Avoid Impacts to Bay Checkerspot Butterfly and Associated Critical Habitat	1. Areas supporting Bay checkerspot larval host plants will be identified by a qualified botanist and protected from disturbance to the extent feasible, by establishing buffer zones around individual plants or populations. The size of the buffer will be determined by a qualified botanist; the actual distance will depend on the plant species potentially affected and the type of disturbance. No herbicide will be applied to the buffer area, and to the extent feasible, maintenance personnel and equipment will not operate within such areas. 2. Herbicides may be used in serpentine areas that do not contain Bay checkerspot butterfly larval host plants or sensitive plant species and habitat when approved by a qualified botanist and for the following maintenance purposes: a) To protect sensitive species and habitat; b) To manage for control of invasive and non-native plants; and/or c) To maintain access to a facility.
GEN-11	Protection of Salt Marsh Harvest Mouse and California Clapper Rail	1. A District qualified biologist will conduct a desk audit to determine whether suitable Salt Marsh Harvest Mouse (SMHM) or California Clapper Rail (CCR) habitat is present in or adjacent to a maintenance activity. 2. Within 7 days prior to work within the range of the Salt Marsh Harvest Mouse (SMHM) or California Clapper Rail (CCR), as depicted on the District's GIS layers, the proposed project area will be surveyed by a qualified biologist to identify specific habitat areas. Surveyed areas will include work locations and access routes. The range of the salt marsh harvest mouse and California clapper rail is based on the SCVWD's GIS mapping reflecting occurrence information and potential habitat. If this mapping is revised, it will be provided to the Service for review. 3. To minimize or avoid the loss of individuals, activities within or adjacent to California clapper rail and salt marsh harvest mouse habitat will not occur within two hours before or after extreme high tides (6.5 feet or above) when the marsh plain is inundated, because protective cover for those species is limited and activities could prevent them from reaching available cover. 4. Specific habitat areas are vegetated areas of cordgass (*Spartina* spp), marsh gumplant (*Grindelia* spp.), pickleweed (*Sarcocornia pacifica*), alkali heath, (*Frankenia* sp.), and other high marsh vegetation, brackish marsh reaches of creek with heavy accumulations of bulrush thatch (old stands), and high water refugia habitat that may include annual grasses, and shrubs immediately adjacent to channels. 5. Within the identified specific habitat areas, vegetation will be removed by hand from areas to be directly impacted by the work activities if possible (hand removal of vegetation is some channels may not be possible). If within the mapped range of the mouse but outside of areas identified as specific habitat areas, then other methods may be possible. 6. Prior to the initiation of work each day for all vegetation management work, ground or vegetation disturbance, operation of large equipment, grading, sediment removal, and bank stabilization work and prior to expanding the work area, if suitable habitat occurs within the immediate work area, a qualified biologist will conduct a pre-construction survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). a. If during the initial daily survey or during work activities a CCR is observed within or immediately

BMP Number	BMP Title	BMP Description
		adjacent to the work area (50 feet), initiation of work will be delayed until the CCR leaves the work area. b. If during the initial daily survey or during work activities a SMHM or similar rodent is observed within or immediately adjacent to the work area (50 feet), initiation of work will be delayed until a *Site Specific Species Protection Form* can be developed and implemented by a qualified biologist to protect the SMHM or similar rodent is developed and implemented by the qualified biologist. Acceptable plan activities may include one or more of the following activities: 1) establishment of a buffer zone at least 50 feet in radius from the rodent; 2) ongoing active monitoring, 3) construction of silt fence barrier between maintenance work and location of the rodent, 4) delay of work activity until the qualified biologist can provide CDFW and the Service a suggested course of action and seek concurrence. 7. Mowing using heavy equipment (tractors, boom mowers, rider mowers) will not be conducted in habitat areas or within 50 feet of habitat areas. If mowing with hand equipment is necessary within 50 feet of habitat areas, an on-site monitor will observe the area in front of the mower from a safe vantage point while it is in operation. If SMHM are detected within the area to be mown, no mowing will occur in that area. If CCR are detected within the area to be mown, the mowing will stop until the individual(s) have left the work area. 8. See ANI-2 for additional restrictions. 9. If visual observation cannot confirm California clapper rail left the work area then it is assumed that the individual(s) remains in the work area and the work will not resume until the area has been thoroughly surveyed (and absence confirmed) or the Service has been contacted for guidance.
GEN-12	Protection of Special-Status Amphibian and Reptile Species	1. A District qualified biologist will conduct a desk audit to determine whether suitable special-status amphibian or reptile habitat is present in or adjacent to a maintenance activity based on all available information including the habitats modeled in the Valley Habitat Plan. 2. If the District Wildlife or Fisheries Biologist determines that a special-status amphibian or reptile could occur in the activity area, a qualified biologist will conduct one daytime and one nighttime survey within a 7 day period preceding the onset of maintenance activities. a. If a special-status amphibian or reptile, or the eggs or larvae of a special status amphibian or reptile, are found within the activity area during a pre-activity survey or during project activities, the qualified biologist shall notify the project proponent about the special-status species and conduct the following work specific activities: i. For minor maintenance activities and for vegetation removal activities that will take less than 1 day, a qualified biologist shall conduct a special status species survey on the morning of and prior to the scheduled work. A. If no special status species is found, the work may proceed. B. If eggs or larvae of a special status species are found, a buffer will be established around the location of the eggs/larvae and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed. C. If an active western pond turtle nest is detected within the activity area, a 50-foot buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. D. If adults or non-larval juveniles of a special status species are found, one of the following two

BMP Number	BMP Title	BMP Description
		procedures will be implemented: i. If, in the opinion of the qualified biologist, capture and removal of the individual to a safe place outside of the work area is less likely to result in adverse effects than leaving the individual in place and rescheduling the work (e.g., if the species could potentially hide and be missed during a follow-up survey), the individual will be captured and relocated by a qualified biologist (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed. ii. If, in the opinion of the qualified biologist, the individual is likely to leave the work area on its own, and work can be feasibly rescheduled, a buffer will be established around the location of the individual(s) and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled. ii. For minor maintenance and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a special-status species survey on each morning of and prior to the scheduled work commencing. E. If eggs or larvae of a special status species are found, a buffer will be established around the location of the eggs/larvae and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed. F. If an active western pond turtle nest is detected within the activity area, a 50 ft-buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. G. If adults or non-larval juveniles of a special status species are found, the individual will be captured and relocated by a qualified biologist (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed. iii. For Sediment Removal and Bank Stabilization Projects the wildlife or fisheries biologist in cooperation with the project proponent shall complete a *Site Specific Species Protection Form for the project*. Elements of the form include: work rescheduling, training work crews, daily surveys, establishment of buffers and buffer fencing, on-site monitoring, habitat modification in advance of work activities, capture and relocation of individual special-status species, methods of documentation, and reporting of results. b. If no special status amphibian or reptile is found within the activity area during a pre-activity survey, the work may proceed. c. During animal conflict management activities, if special status species are found within a burrow proposed for destruction, a qualified biologist will determine an appropriate buffer distance around that burrow to ensure adequate protection of the habitat. The buffer area may include not destroying adjacent burrows as that may damage subterranean networks of the occupied burrow or produce substrate vibrations which could interfere with prey detection mechanisms. If two consecutive follow up surveys are conducted (spaced 30 days apart) in which the burrow is found to be unoccupied, work can proceed as planned. A naturally found back filled burrow known to have been inhabited by a special-status species will be presumed to still be occupied by that species and a clearly delineated buffer demarcation of the burrow area will be in place for the duration of nearby work activities. In rare instances in which destruction of the burrow is not avoidable during animal conflict management, the animal will be relocated to a safe burrow outside the

BMP Number	BMP Title	BMP Description
		impact area, with USFWS and/or CDFW approval, depending on the listing status of the species in question. A biologist will observe the relocated animal until it is certain that the animal is not in immediate danger of desiccation or predation.
GEN-13	Protection of Bat Colonies	1. A District Wildlife Biologist will conduct a desk audit to determine whether suitable habitat (appropriate roost trees or anthropogenic structures) is present for bat colonies within 100 feet of the work site, staging areas, or access routes. 2. If potential bat colony habitat is determined to be present, within two weeks prior to the onset of work activities a qualified biologist will conduct a survey to look for evidence of a bat use. If evidence is observed, or if potential roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), an evening survey and/or nocturnal acoustic survey may be necessary to determine if the bat colony is active and to identify the specific location of the bat colony. 3. If an active bat colony is present then the qualified biologist will make the following determinations: a. The work can proceed without unduly disturbing the bat colony b. There is a need for a buffer zone to prevent disturbance to the bat colony, and implementation of the buffer zone (determined on a case-by-case basis by a qualified biologist) will reduce or eliminate the disturbance to an acceptable level. 4. If a bat colony is found in a tree or structure that must be removed or physically disturbed the qualified biologist will consult with DFW prior to initiating any removal or exclusion activities.
GEN-14	Protection of San Francisco Dusky-footed Woodrat	1. Prior to work within riparian, oak woodland, or coyote brush scrub habitat, or the removal of any oak trees outside these habitats, a District Wildlife Biologist will conduct a desk audit to determine whether woodrats could be present within suitable habitat for San Francisco dusky-footed woodrat or is known to be present in or adjacent to a maintenance activity site. 2. If the District Wildlife Biologist determines that no San Francisco dusky-footed woodrat habitat is present, or there is habitat present but it will not be affected by the maintenance activity, then no further action is required. 3. If the District Wildlife Biologist determines that suitable San Francisco dusky-footed woodrat habitat is present and may be affected by the maintenance activity, a qualified biologist shall conduct a pre-activity survey within 2 weeks prior to the start of work to determine if woodrat nests are present, or within 5 feet of, the immediate activity area. If woodrat nests are determined to be present, the following measures shall be implemented: a. To the extent feasible, impacts to woodrat nests will be avoided by maintaining a minimum 5-ft buffer between maintenance activities and nests. Even if a 5-ft buffer cannot be maintained, the District will minimize impacts to nests by avoiding the direct destruction or modification of the nests to the extent feasible. b. If one or more woodrat nests are determined to be present and physical disturbance or destruction of the nests cannot be avoided, then the woodrats shall be evicted from their nests and the nest material relocated outside of the disturbance area, prior to onset of activities that would disturb the nest, to avoid injury or mortality of the woodrats. First, an alternate location for the nest material shall be chosen by a qualified biologist based on the following criteria: 1) proximity to current nest location; 2) safe buffer distance from planned work; 3) availability of food resources; and 4) availability of cover. An alternate nest structure will then be built at the chosen location. The structure will be made up of small logs (e.g., available materials 2 inches in diameter or greater) stacked to provide a foundation

BMP Number	BMP Title	BMP Description
		on which the woodrats can add nest material. Subsequently, during the evening hours (i.e., within 2 hours prior to sunset), a qualified biologist will slowly dismantle the existing woodrat nest to allow any woodrats to flee and seek cover. All sticks from the nest will be collected and spread over the alternate structure. If young woodrats that are still dependent on their mother are discovered, relocation efforts will cease for the evening and the California Department of Fish and Wildlife will be contacted for guidance on how to proceed.
GEN-15	Salvage Native Aquatic Vertebrates from Dewatered Channels	If fisheries or native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a fish and native aquatic vertebrate relocation plan shall be implemented to ensure that fish and native aquatic vertebrates are not stranded. Relocation efforts will be based on the District's Fish Relocation Guidelines (Attachment B). Streams that support a sensitive species (i.e. steelhead) will require a relocation effort and/ or initial onsite monitoring by a qualified biologist depending on seasonal conditions: 1. In non-tidal channels, where water is to be diverted, prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual work sites when site conditions preclude reasonably effective operation of capture gear and equipment. 2. Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work.
GEN-15.5	Avoidance of Impacts on the San Joaquin Kit Fox	1. A qualified District biologist will conduct a desk audit to determine whether an SMP activity will occur in an area where the San Joaquin kit fox could potentially occur (i.e., roughly east of Frazier Lake Road and south of Bloomfield Avenue), and in potential habitat for the species. 2. If the District biologist determines that an SMP activity could occur in an area that could potentially support a kit fox, the SCVWD will implement applicable pre-activity surveys and other measures in accordance with the USFWS's *San Joaquin Kit Fox Survey Protocol for the Northern Range*, as follows: a) Conduct a preconstruction/pre-activity survey no less than 14 days and no more than 30 days prior to the beginning of project implementation. Surveys shall identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, and assess the potential impacts to the kit fox by the proposed activity. The status of all dens shall be determined and mapped in accordance with the survey protocol. b) If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary, the USFWS shall be immediately notified. Disturbance to all San Joaquin kit fox dens should be avoided to the maximum extent possible. Destruction of any known or natal/pupping kit fox den would require take authorization from the USFWS. c) The project proponent will establish exclusion zones around the kit fox dens, if determined to be present. The configuration of the exclusion should have a radius measured outward from the entrance or cluster of entrances. The following radii are minima to be applied: ▪ Potential den: 50 feet ▪ Known den: 100 feet ▪ Natal/pupping den: Service must be contacted (occupied and unoccupied) ▪ Atypical den: 50 feet.

BMP Number	BMP Title	BMP Description
		3. If take of the San Joaquin kit fox will occur, take authorization from the USFWS and CDFW will be necessary.

General Maintenance Practices

GEN-16	In-Channel Minor Activities	For in-channel minor work activities, work will be conducted from the top of the bank if access is available and there are flows in the channel.
GEN-17	Employee/Contractor Training	All appropriate District staff and contractors will receive annual training on Stream Maintenance Program BMPs. The training will also include an overview of special-status species identification and habitat requirements. District staff and contractors will receive fact sheets to assist with in-the-field identification of special-status species and their habitats.
GEN-18	Paperwork Required On-site	1. Copies of regulatory permits related to the Stream Maintenance Program will be kept on-site and available for review, if requested by regulatory personnel. 2. Copies of the Stream Maintenance Program Manual and this BMP Manual will be kept on-site.
GEN-19	Work Site Housekeeping	1. District employees and contractors will maintain the work site in neat and orderly conditions on a daily basis, and will leave the site in a neat, clean, and orderly condition when work is complete. 2. Slash, sawdust, cuttings, etc. will be removed to clear the site of vegetation debris. As needed, paved access roads and trails will be swept and cleared of any residual vegetation or dirt resulting from the maintenance activity. 3. 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 (see BMPs GEN-24). 4. The District's maintenance crews are responsible for properly removing and disposing of all debris incurred as a result of construction within 72 hours of project completion. 5. All trash that is brought to a project site during maintenance activities (e.g., plastic water bottles, plastic lunch bags, cigarettes) will be collected at the site daily.
GEN-20	Erosion and Sediment Control Measures	1. Soils exposed due to maintenance activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. The channel bed and areas below the Ordinary High Water Mark (OHWM) are exempt from this BMP. 2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special-status species would be impacted by the application. 3. Erosion control measures will be installed according to manufacturer's specifications. 4. Appropriate measures include, but are not limited to, the following: o Silt Fences o Straw Bale Barriers o Brush or Rock Filters o Storm Drain Inlet Protection o Sediment Traps

BMP Number	BMP Title	BMP Description
		o Sediment Basins o Erosion Control Blankets and Mats o Soil Stabilization (i.e. tackified straw with seed, jute or geotextile blankets, etc.) o Wood chips o Straw mulch 5. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences). 6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation; and only on one side of levee slopes. Inboard and outboard areas will only have installations set in an alternating pattern, such that no inboard and outboard levee faces would have erosion control blankets along the same levee stationing. 7. Each maintenance site will be visually inspected at least once daily during extended storm events to confirm that BMPs are effective and maintained as necessary. 8. Each maintenance site will be visually inspected within two business days (48 hours) after each significant rain event to determine whether BMPs were effective and identify the need to modify or maintain existing BMPs or include additional BMPs to be protective.
GEN-21	Staging and Stockpiling of Materials	1. To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all maintenance equipment and materials (e.g., road rock and project spoil) will be contained within the existing service roads, paved roads, or other pre-determined staging areas. 2. Building materials and other maintenance-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies or storm drains. Materials will not be stockpiled longer than seven (7) calendar days. 3. No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens). 4. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited. 5. Wet material removed from an isolated creek reach may be pulled to the side of the channel (within the channel and below top of bank) and allowed to naturally drain prior to removal from the channel. Pulled material will be removed from the channel prior to deactivation of the site or forecast of rain. 6. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained (i.e., per manufacturer specifications) silt fencing or other means of erosion control. During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers (GEN-24). 7. All pipes, culverts, or similar structures stored at a site within sensitive species areas, for one or more overnight periods shall be securely capped prior to storage or inspected before the pipe is subsequently moved. If any potential special-status species are observed within a pipe, a District biologist shall be consulted on what steps should be taken to protect the species. If a District biologist is on-site, they may remove the special status species from the pipes and relocate to the nearest appropriate and unaffected habitat.

BMP Number	BMP Title	BMP Description
GEN-22	Sediment Transport	To prevent sediment-laden water from being released back into waterways during transport of spoils to disposal locations, truck beds will be lined with an impervious material (e.g., plastic), or the tailgate blocked with wattles, hay bales, or other appropriate filtration material. Trucks may then drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter, but only within the active project area of the creek where the sediment is being loaded into the trucks or within an identified vegetated area (swale) that is separated from the creek.
GEN-23	Stream Access	District personnel will use existing access ramps and roads to the extent feasible. If necessary to avoid large mature trees, native vegetation, or other significant habitat features, temporary access points will be constructed in a manner that minimizes impacts according to the following guidelines: 1. Temporary access points will be constructed as close to the work area as possible to minimize equipment transport 2. In considering channel access routes, slopes of greater than 20 percent will be avoided, if possible. 3. Any temporary fill used for access will be removed upon completion of the project and pre-project topography will be restored to the extent possible. 4. When temporary access is removed, disturbed areas will be revegetated or filled with compacted soil, seeded, and/or stabilized with erosion control fabric immediately after construction to prevent future erosion. 5. Personnel will use the appropriate equipment for the job that minimizes impacts and disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, will be used depending on the site and maintenance activity.
GEN-24	On-Site Hazardous Materials Management	1. An inventory of all hazardous materials used (and/or expected to be used) at the worksite and the end products that are produced (and/or expected to be produced) after their use will be maintained by the worksite manager. 2. As appropriate, containers will be properly labeled with a “Hazardous Waste” label and hazardous waste will be properly recycled or disposed of off-site. 3. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage. 4. Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110% of the primary container(s). 5. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. 6. All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. 7. Sanitation facilities (e.g., portable toilets) will be placed outside of the creek channel and floodplain. Direct connections with soil, the storm drainage system, and surface waters will be avoided. 8. Sanitation facilities will be regularly cleaned and/or replaced, and inspected daily for leaks and spills.
GEN-25	Existing Hazardous Materials	If hazardous materials, such as oil, batteries or paint cans, are encountered at the maintenance sites, the District will carefully remove and dispose of them according to applicable regulatory requirements. District staff will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed at a hazardous waste facility.
GEN-26	Spill Prevention and Response	The District will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels following these measures:

BMP Number	BMP Title	BMP Description
		1. District field personnel will be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills. 2. Equipment and materials for cleanup of spills will be available on site and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements. 3. Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means. 4. Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations). All field personnel will be advised of these locations. 5. District staff will routinely inspect the work site to verify that spill prevention and response measures are properly implemented and maintained. *Spill Response Measures:* For small spills on impervious surfaces, absorbent materials will be used to remove the spill, rather than hosing it down with water. For small spills on pervious surfaces such as soil, the spill will be excavated and properly disposed rather than burying it. Absorbent materials will be collected and disposed of properly and promptly. If a hazardous materials spill occurs that cannot be contained or cleaned up with the onsite materials, the onsite District field personnel will be responsible for immediately initiating an emergency response sequence by notifying the proper authorities (i.e., District Emergency Response (ER) Team and public fire and hazmat agencies) of the release; taking appropriate defensive steps from a safe distance to secure the site to minimize damage to people, environment, and property (PEP); and deferring all other response activities to public emergency response agencies and/or the District Emergency Response (ER) Team or District ER Contractor. Depending on the nature of the release, the District ER Team's actions will include: urgent (responding within 2 hours of notification) field response site reconnaissance, emergency sequence initiation, defensive containment, release control, incident command; or priority (non 2-hour) field response site reconnaissance and clean-up operations. If a "reportable" spill of petroleum products occurs, the District's Stream Maintenance Implementation Program Manager will be notified and action taken to contact the appropriate safety and cleanup crews. A reportable spill is defined as when: ▪ a film or sheen on, or discoloration of, the water surface or adjoining bank/shoreline is observed; or ▪ a sludge or emulsion is deposited beneath the surface of the water or adjoining banks/shorelines (40 Code of Federal Regulations 110); or when ▪ another violation of water quality standards is observed. A written description of the reportable release must be submitted to the appropriate Regional Water Quality Control Board and the California Department of Toxic Substances Control (DTSC). This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. If an appreciable spill has occurred, and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis will be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the District or contractors will select and implement

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		measures to control contamination, with a performance standard that surface and groundwater quality will be returned to baseline conditions. These measures will be subject to approval by the District, DTSC, and the Regional Water Quality Control Board.
GEN-27	Existing Hazardous Sites	Upon selection of maintenance project locations, the District will conduct a search for existing known contaminated sites, as part of its annual preparation of the Notice of Proposed Work (NPW), on the State Water Resource Control Board's GeoTracker Web site (http://www.geotracker.waterboards.ca.gov). The Geotracker search will only be performed for the District's ground disturbing activities. For any proposed ground disturbing maintenance sites located within 1,500 feet of any "open" sites where contamination has not been remediated, the District will contact the RWQCB case manager listed in the database. The District will work with the case manager to ensure maintenance activities would not affect cleanup or monitoring activities or threaten the public or environment.
GEN-28	Fire Prevention	1. All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. 2. During the high fire danger period (April 1–December 1), work crews will ~~: a) H~~have appropriate fire suppression equipment available at the work site.
GEN-29	Dust Management	The District will implement the Bay Area Air Quality Management District's (BAAQMD) required Dust Control Measures (http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en). Current measures stipulated by the BAAQMD Guidelines include the following: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. 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. 4. Water used to wash the various exposed surfaces (i.e., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter the water way. 5. All vehicle speeds on unpaved roads shall be limited to 15 mph. 6. 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. 7. 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. 8. 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. 9. 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.

BMP Number	BMP Title	BMP Description
GEN-30	Vehicle and Equipment Maintenance	1. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. 2. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use. 3. Incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) will be checked for leaking oil and fluids. Vehicles or equipment visibly leaking operational fluids will not be allowed on-site. 4. No heavy equipment will operate in a live stream. This will not apply to activities for which no other option exists, such as sediment removal which cannot be conducted from top of bank, etc. In these cases, dewatering will be conducted as necessary, following the protocols in BMPs GEN-33 or GEN-34. 5. No equipment servicing will be done in the creek channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps and generators). 6. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location, and that can be performed without releasing any material into the floodway or water, will be conducted in the channel or floodplain. 7. If necessary, all servicing of equipment done at the job site will be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills. Designated areas will not directly connect to the ground, surface water, or the storm drain system. The service area will be clearly designated with berms, sandbags, or other barriers. Secondary containment, such as a drain pan, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of offsite.
GEN-31	Vehicle Cleaning	1. Equipment will be cleaned of any visible sediment or vegetation clumps before transferring and using in a different watershed to avoid spreading pathogens or exotic/invasive species. 2. Vehicle and equipment washing can occur on-site only as needed to prevent the spread of sediment, pathogens or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including creek channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, straw wattles or bales, fiber rolls, and silt screens). The discharge of decant water from any on-site wash area to water bodies or to areas outside of the active project site is prohibited. Additional vehicle/equipment washing will occur at the approved wash area in the District's corporation yard.
GEN-32	Vehicle and Equipment Fueling	1. No fueling will be done in the channel (top-of-bank to top-of-bank) or immediate floodplain unless equipment stationed in these locations cannot be readily relocated (e.g., pumps and generators). 2. All off-site fueling sites (i.e., on access roads above the top-of-bank) will be equipped with secondary containment and avoid a direct connection to soil, surface water, or the storm drainage system. 3. For stationary equipment that must be fueled on-site, secondary containment, such as a drain pan or drop cloth, will be used to prevent accidental spills of fuels from reaching the soil, surface water, or the storm drain system.

BMP Number	BMP Title	BMP Description
Dewatering		
GEN-33	Dewatering for Non-Tidal Sites	When sediment removal and bank stabilization work area includes a flowing stream, the entire streamflow will be diverted around the work area by construction of a temporary dam and/or bypass. Where appropriate, stream flow diversions will occur via gravity driven systems. *A. Planning to avoid and minimize impacts to water quality and aquatic wildlife:* 1. For construction and monitoring of a stream flow bypass, the *Sediment Removal and Bank Stabilization Projects* checklist will be completed. 2. Recommendations by a qualified Fisheries Biologist to protect native fisheries and aquatic vertebrates will be incorporated into the bypass design. The recommendations may include but are not limited to: i. Screening the stream flow diversion source or pump to prevent entrainment of native fish or amphibian species. The screening dimensions will be appropriate to the species present. ii. Relocation of native aquatic vertebrates. This will include the methods to be used to capture and hold and move the aquatic vertebrates and a description of where the aquatic vertebrates will be relocated. 3. Depending on the channel configurations, sediment removal activities may occur where the flows are not bypassed around the work site as long as a berm is left between the work area and stream flows to minimize water quality impacts during excavation activities. The berm between the work and the live channel will be wide enough to prevent introduction of turbid water from the cell into the live channel. *B. Construction*: 1. The construction of facilities will be based on the water bypass plan. 2. Coffer dams will be installed both upstream and downstream of the work area to minimize impacts or the distance necessary to accomplish effective passive systems. 3. In streams where water may enter the construction site from downstream (reverse flow) additional coffer dams (downstream) may be necessary. When multiple coffer dams are constructed, the upstream dam will be constructed first. 4. Instream cofferdams will only be built from materials such as sandbags, earth fill, clean gravel, or rubber bladders which will cause little or no siltation or turbidity. 5. Plastic sheeting will be placed over k-rails, timbers, and earth fill to minimize water seepage into and out of the maintenance areas. The plastic sheets will be firmly anchored, using sandbags, to the streambed to minimize water seepage. 6. When pumping is necessary to dewater a work site, a temporary siltation basin and/or use of silt bags may be required to prevent sediment from re-entering the wetted channel. Pump intakes will be screened to prevent harm to aquatic wildlife. 7. If necessary to prevent erosion an energy dissipater will be constructed at the discharge point. 8. Timing of flow diversions will be coordinated with the completion of the dam structure to facilitate not drying up the downstream creek area and to minimize dry back conditions. *C. Implementation*: 1. Water flows downstream of the project site will be maintained to prevent stranding aquatic vertebrates.

BMP Number	BMP Title	BMP Description
		2. Water diverted around work sites and water detained by coffer dams will be protected from maintenance activity-related pollutants, such as soils, equipment lubricants or fuels. 3. The *Fish Relocation Guidelines* (Attachment B) will be implemented to ensure that fish and other aquatic vertebrates are not stranded during construction and implementation of channel dewatering. a) Native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual work sites when site conditions preclude reasonably effective operation of capture gear and equipment. b) Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work. 4. Filtration devices (silt bags attached to the end of discharge hoses and pipes to remove sediment from discharged water) or settling basins will be provided as necessary at discharge sites to ensure that the turbidity of discharged water is not visibly more turbid than the water in the channel upstream of the maintenance site. If increases in turbidity are observed, additional measures will be implemented such as a larger settling basin or additional filtration. If increases in turbidity persist, the District's Stream Maintenance Program Implementation Project Manager will be alerted since turbidity measurements may be required. 5. Water remaining in the work area will be removed by evaporation, seepage, or pumping. When pumping is required to dewater a site, the decanted water will be discharged with water bypassed around the site or in a separate erosion control – energy dissipation area/vegetated swale. The turbidity of discharged water will not be visibly more turbid than the receiving water. *Deconstruction*: 1. When maintenance is completed, the flow diversion structure will be removed as soon as possible. Impounded water will be released at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat. 2. Removal will normally proceed from downstream in an upstream direction. 3. When diversion structures are removed, the ponded water will be directed back into the low-flow channel in a phased manner to minimize erosion and downstream water quality impacts. Normal flows will be restored. 4. The area disturbed by flow bypass mechanisms will be restored to the pre-project condition at the completion of the project (to the extent practical). This may include, but is not limited to, recontouring the area and planting of riparian vegetation.

BMP Number	BMP Title	BMP Description
GEN-34	Dewatering in Tidal Work Areas	For tidal areas, a downstream cofferdam will be constructed to prevent the work area from being inundated by tidal flows. 1. Installation of cofferdams and fish exclusion measures will be installed at low tide when the channel and project site are at their driest. 2. It is preferable to not use any bypass pipes when work is being conducted on one side of the channel, if is isolated by the cofferdam, and flows can continue on the other side of the creek channel without entering the project area. 3. If downstream flows cannot be diverted around the project site, the creek waters will be transmitted around the site through cofferdam bypass pipes. Waters discharged through tidal cofferdam bypass pipes will not exceed 50 NTUs over the background levels of the tidal waters into which they are discharged. 4. Cofferdams in tidal areas may be made from earthen or gravel material. If earth is used, the downstream and upstream faces will be covered by a protected covering (e.g., plastic or fabric) if needed to minimize erosion. A protected covering or sheeting will be placed on the water side of an earthen coffer dam to protect water quality. 5. When maintenance is completed, the cofferdams and bypass pipes will be removed as soon as possible but no more than 72 hours after work is completed. Flows will be restored at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat.
GEN-35	Pump/Generator Operations and Maintenance	When needed to assist in channel dewatering, pumps and generators will be maintained and operated in a manner that minimizes impacts to water quality and aquatic species. 1. Pumps and generators will be maintained according to manufacturers' specifications to regulate flows to prevent dryback or washout conditions. 2. Pumps will be operated and monitored to prevent low water conditions, which could pump muddy bottom water, or high water conditions, which creates ponding. 3. All pump intakes will be screened. Pumps in steelhead creeks will be screened according to NMFS criteria (http://www.swr.noaa.gov/sr/fishscrn.pdf) to prevent entrainment of steelhead.
Public Safety		
GEN-36	Public Outreach	The public will be informed of stream maintenance work prior to the start of work as part of the preparation of the NPW for all projects in the NPW: 1. Each spring, a newspaper notice will be published with information on the NPW work sites, approximate work dates, and contact information. 2. Neighborhood Work Notices will be distributed as part of the NPW preparation prior to the start of work. 3. Local governments (cities and County) will be notified of scheduled maintenance work. The NPW will be submitted to the public works departments, local fire districts, and the District's Flood Protection and Watershed Advisory Committees. 4. The District will post specific information on individual maintenance projects on the Stream Maintenance Web site: (http://valleywater.org/EkContent.aspx?id=379&terms=stream+maintenance) 5. For high profile projects, at the District's discretion, signs will be posted in the neighborhood to notify the public at least one week in advance of maintenance schedules, trail closures, and road/lane closures as necessary and as possible. Signage used at work sites will include contact information for lodging comments and/or complaints regarding the maintenance activities.
GEN-37	Implement Public Safety Measures	The District will implement public safety measures during maintenance as follows: 1. Construction signs will be posted at job sites warning the public of construction work and to exercise caution,

BMP Number	BMP Title	BMP Description
		as appropriate to public accessed areas. 2. Where work is proposed adjacent to a recreational trail, warning signs will be posted several feet beyond the limits of work. Signs will also be posted if trails will be temporarily closed. 3. If needed, a lane will be temporarily closed to allow for trucks to pull into and out of access points to the work site. 4. Temporary fencing, either the orange safety type or chain link, will be installed above repair sites on bank stabilization projects. 5. When necessary, District or contracted staff will provide traffic control and site security.
GEN-38	Minimize Noise Disturbances to Residential Areas	The District will implement maintenance practices that minimize disturbances to residential areas surrounding work sites. 1. With the exception of emergencies, work will be conducted during normal working hours. Maintenance activities in residential areas will not occur on Saturdays, Sundays, or District observed holidays except during emergencies, or with approval by the local jurisdiction and advance notification of surrounding residents. 2. Vehicles, generators and heavy equipment will be equipped with adequate mufflers. 3. Idling of vehicles will be prohibited beyond 5 minutes unless operation of the engine is required to operate a necessary system such as a power take-off (PTO).
GEN-39	Planning for Pedestrians, Traffic Flow, and Safety Measures	1. Work will be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the vicinity of the work site. If temporary lane closures are necessary, they will be coordinated with the appropriate jurisdictional agency and scheduled to occur outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. Any lane closures will include advance warning signage, a detour route and flaggers in both directions. When work is conducted on public roads and may have the potential to affect traffic flow, work will be coordinated with local emergency service providers as necessary to ensure that emergency vehicle access and response is not impeded. 2. Bicycle and pedestrian facility closures will be scheduled outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. 3. Public transit access and routes will be maintained in the vicinity of the work site. If public transit will be affected by temporary road closures and require detours, affected transit authorities will be consulted and kept informed of project activities. 4. Adequate parking will be provided or designated public parking areas will be used for maintenance-related vehicles not in use through the maintenance period. 5. Access to driveways and private roads will be maintained. If brief periods of maintenance would temporarily block access, property owners will be notified prior to maintenance activities.

BMP Number	BMP Title	BMP Description
Cultural Resources		
GEN-40	Discovery of Cultural Remains or Historic or Paleontological Artifacts	Work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met. 1. Work at the location of the find will halt immediately within 50 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone, which shall measure at least 50 feet in all directions from the find. 2. The District shall retain the services of a Consulting Archaeologist or Paleontologist, who shall visit the discovery site as soon as practicable, and perform minor hand-excavation to describe the archaeological or paleontological resources present and assess the amount of disturbance. 3. The Consulting Archaeologist shall provide to the District and the Corps, at a minimum, written and digital-photographic documentation of all observed materials, utilizing the guidelines for evaluating archaeological resources for the California Register of Historic Places (CRHP) and National Register of Historic Places (NRHP). Based on the assessment, the District and Corps shall identify the CEQA and Section 106 cultural-resources compliance procedure to be implemented. 4. If the find appears to not meet the CRHP or NRHP criteria of significance, and the Corps archaeologist concurs with the Consulting Archaeologist's conclusions, construction shall continue while monitored by the Consulting Archaeologist. The authorized maintenance work shall resume at the discovery site only after the District has retained a Consulting Archaeologist to monitor and the Watershed Manager has received notification from the Corps to continue work. 5. If the find appears significant, avoidance of additional impacts is the preferred alternative. The Consulting Archaeologist shall determine if adverse impacts to the resources can be avoided. 6. When avoidance is not practical (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the SMP objective), the District shall develop an Action Plan and submit it to the Corps within 48 hours of Consulting Archaeologist's evaluation of the discovery. The action Plan may be submitted via e-mail to ~~(~~rstradford@spd.usace.army.mil~~)~~. The Action Plan is synonymous with a data-recovery plan. It shall be prepared in accordance with the current professional standards and State guidelines for reporting the results of the work, and shall describe the services of a Native American Consultant and a proposal for curation of cultural materials recovered from a non-grave context. 7. The recovery effort will be detailed in a report prepared by the archaeologist in accordance with current archaeological standards. Any non-grave artifacts will be placed with an appropriate repository. 8. The Consulting Paleontologist will meet the Society for Vertebrate Paleontology's criteria for a "qualified professional paleontologist" (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995). 9. The paleontologist will follow the Society for Vertebrate Paleontology's guidelines for treatment of the artifact. Treatment may include preparation and recovery of fossil materials for an appropriate museum or university collection, and may include preparation of a report describing the finds. The District will be responsible for ensuring that paleontologist's recommendations are implemented. 10. In the event of discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent.) 11. Immediately notify the Santa Clara County Coroner and provide any information that identify the remains as Native American. If the remains are determined to be from a prehistoric Native American, or determined to be a Native American from the ethnographic period, the Coroner shall contact the Native American Heritage

BMP Number	BMP Title	BMP Description
		Commission (NAHC) within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a Most Likely Descendant (MLD). The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. 12. Preservation in situ is the preferred option. Human remains shall be preserved in situ if continuation of the maintenance work, as determined by the Consulting Archaeologist and MLD, will not cause further damage to the remains. The remains and artifacts shall be documented and the find location carefully backfilled (with protective geo-fabric if desirable) and recorded in District project files. 13. Human remains or cultural items exposed during maintenance that cannot be protected from further damage shall be exhumed by the Consulting Archaeologist at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties.
GEN-41	Review of Projects with Native Soil	A cultural resources specialist will conduct a review and evaluation of those sites that would involve disturbance / excavation of native soil previously undisturbed by contemporary human activities to determine their potential for affecting significant cultural resources. The evaluation of the potential to disturb cultural resources will be based on an initial review of archival information provided by the California Historical Resources System/Northwest Information Center (CHRIS/NWIC) in regard to the project area based on a 0.25 mile search radius. It is recommended that this initial archival review be completed by a professional archaeologist who will be able to view confidential site location data and literature to arrive at a preliminary sensitivity determination. If necessary, a further archival record search and literature review (including a review of the Sacred Lands Inventory of the Native American Heritage Commission); and a field inventory of the project area will be conducted to determine the presence/absence of surface cultural materials associated with either prehistoric or historic occupation. The results along with any mitigation and/or management recommendations would be presented in an appropriate report format and include any necessary maps, figures, and correspondence with interested parties. A summary table indicating appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources; data recovery, etc.) will be developed for each project site reviewed. The management actions will be implemented on site to avoid significant effects to cultural resources.
Utilities		
GEN-42	Investigation of Utility Line Locations	An evaluation of the locations of utility lines that could be affected by maintenance activities will be conducted annually as part of the preparation of the Notice of Proposed Work (NPW). Utilities will be avoided as much as possible. For maintenance areas with the potential for adverse effects on utility services, the following measures shall be implemented: 1. Utility excavation or encroachment permits shall be required from the appropriate agencies. These permits include measures to minimize utility disruption. The District and its contractors shall comply with permit conditions. Such conditions shall be included in construction contract specifications. 2. Utility locations shall be verified through a field survey (potholing) and use of the Underground Service Alert services. 3. Detailed specifications shall be prepared as part of the design plans to include procedures for the excavation, support, and/or fill of areas around utility cables and pipelines. All affected utility services shall be notified of the District's maintenance plans and schedule. Arrangements shall be made with these entities regarding protection, relocation, or temporary disconnection of services. 4. Residents and businesses in the project area shall be notified of planned utility service disruption 2 to 4 days in advance, in conformance with state standards. 5. Disconnected cables and lines shall be reconnected promptly.

B. SECTION B – Sediment Removal BMPs

This group of BMPs is intended to be implemented specifically during sediment removal activities to avoid potential impacts on biological resources.

BMP Number	BMP Title	BMP Description
SED-1	Groundwater Management	If high levels of groundwater (i.e., visible water) are encountered during excavations in a work area, the water will be pumped out of the work site or left within the work area if the work activity is not causing water quality degradation in a live stream. Water Quality monitoring would need to occur. If necessary to protect water quality, the extracted water will be discharged into specifically constructed infiltration basins, holding ponds, or areas with vegetation to remove sediment prior to the water re-entering a creek. Water discharged into vegetated areas or swales will be pumped in a manner that will not create erosion around vegetation.
SED-2	Prevent Scour Downstream of Sediment Removal	Sediment removal sites in the transport zone on alluvial fans may cause increased scour downstream if they experience scouring flows or rapid sediment accumulation after maintenance. After sediment removal, the channel will be graded so that the transition between the existing channel both upstream and downstream of the maintenance area is smooth and continuous between the maintained and non-maintained areas and does not present a sudden vertical transition (wall of sediment) or other blockage that could erode once flows are restored to the channel.
SED-3	Restore Channel Features	Low-flow channels within non-tidal streams will be contoured to facilitate fish passage and will emulate the pre-construction conditions as closely as possible, within the finished channel topography.
SED-4	Berm Bypass	Where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel will be wide enough to prevent introduction of turbid water from the cell into the live channel.
SED-5	Sediment Characterization	Projects involving sediment removal at stream gauges, outfalls, culverts, flap gates, tide gates, grade control structures, bridges, fish ladders, and fish screens in excess of 25 cubic yards shall be characterized in accordance with the SCVWD's Sediment Characterization Plans for SMP-2. These projects shall be reported in the annual summary report. Sediment removed will not be reused without pre-approval from appropriate regulatory agencies. See section 5.4 for information on the waiver process.

C. SECTION C – Vegetation Management BMPs

These BMPs provide specific and detailed guidance on the variety of vegetation management procedures implemented by the District. BMPs for the following maintenance techniques are included: tree pruning, tree removal, plant removal, woody debris management, herbicide application, mowing, discing, flaming, and grazing. Practices will be implemented by fully trained and qualified field crews.

BMP Number	BMP Title	BMP Description
VEG-1	Minimize Local Erosion Increase from In-channel Vegetation Removal	To minimize the potential effect of localized erosion, the toe of the bank will be protected by leaving vegetation to the maximum extent possible and consistent with the maintenance guidelines or original design requirements.
VEG-2	Non-native Invasive Plant Removal	Invasive species (e.g. cape ivy [*Delairea odorata/Senecio mikanoides]*, arundo [*Arundo donax*]) will be disposed of in a manner that will not contribute to the further spread of the species. Cape ivy removed during a project shall be bagged and disposed of in a landfill. Arundo canes will be prevented from floating downstream or otherwise entering the creek or waterway.
VEG-3	Use Appropriate Equipment for Instream Removal	When using heavy equipment to cut or remove instream vegetation, low ground pressure equipment, such as tracked wheels will be utilized to reduce impacts to the streambed.
VEG-4	Use Flamers with Caution	1. A fire extinguisher, water supply and other appropriate fire suppression equipment will always be kept close to the work site in case of an emergency. 2. Propane tanks will be checked for leaks and proper functioning prior to and proceeding use of flaming equipment. The propane tank will be treated as a hazardous material.
VEG-5	Conduct Flaming During Appropriate Weather and Seasonal Conditions	Flamers will not be used during periods of high fire danger or in areas where fuel or climate conditions could accidentally ignite a fire.
VEG-6	Standard Grazing Procedures	1. Vegetation and areas to be preserved will be fenced off to exclude grazing animals. 2. Grazing animals will be excluded from stream channels, using fencing or other barriers.

D. SECTION D – Bank Stabilization BMPs

These BMPs provide additional guidance during implementation of bank stabilization projects to avoid impacts on biological and cultural resources. Review of the Post-Project Restoration BMPs in Section F is recommended because those measures will be implemented after bank stabilization projects are complete. The BMPs included in this section are implemented by the field crew and site manager.

BMP Number	BMP Title	BMP Description
BANK-1	Bank Stabilization Design to Prevent Erosion Downstream	To further prevent potential downstream erosion impacts due to bank stabilization, the site design will be adjusted to provide proactive protection of vulnerable areas within the reach of the worksite. Such measures include, but are not limited to, appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors. Bank stabilization will include appropriate transition designs upstream and downstream of the work site to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Concrete that has not been cured is alkaline and can increase the pH of the water. Fresh concrete will be isolated until it no longer poses a threat to water quality using the following appropriate measures: 1. Wet sacked concrete will be excluded from the wetted channel for a period of 30 days after installation. During that time, the wet sacked concrete will be kept moist (such as covering with wet carpet) and runoff from the wet

BMP Number	BMP Title	BMP Description
		sacked concrete will not be allowed to enter a live stream. 2. Poured concrete will be excluded from the wetted channel for a period of 30 days 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. 3. Dry sacked concrete will not be used in any channel. 4. An area outside of the channel and floodplain will be designated to clean out concrete transit vehicles.
BANK-3	Bank Stabilization Post-Construction Maintenance	The District may maintain or repair bank stabilization projects that are less than 2 years old that are damaged by winter flows. The District will notify the regulatory agencies 24 hours prior to beginning the work and the work will be reported as part of the Post-Construction Report submitted by January 15 of each year or if necessary, the subsequent year. Appropriate BMPs will be applied during maintenance repairs.

E. SECTION E – Post-Project Restoration BMPs

These BMPs will be implemented, as appropriate, on all sites that involve ground disturbance.

BMP Number	BMP Title	BMP Description
REVEG-1	Seeding	Sites where maintenance activities result in exposed soil will be stabilized to prevent erosion. Disturbed areas shall be seeded with native seed as soon as is appropriate after maintenance activities are complete. An erosion control seed mix may be applied to exposed soils, and down to the ordinary high water mark (OHWM). 1. The seed mix should consist of California native grasses (e.g., *Hordeum brachyantherum*, *Elymus glaucus*, and *Vulpia microstachyes*) or annual, sterile seed mix. 2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place (GEN-20).
REVEG-2	Planting Material	Revegetation and replacement plantings will consist of locally collected native species. Species selection will be based on surveys of natural areas on the same creek that have a similar ecological setting and/or as appropriate for the site location.

F. SECTION F – Management of Animal Conflict BMPs

Methods of animal management included in the SMP are avoidance, biological controls, physical alterations, habitat alterations, and lethal controls. Of all these methods, implementation of lethal controls has the highest potential for environmental and biological impacts. Therefore, the animal management BMPs provided in this section focus on lethal controls. The application area for lethal controls will be identified during the annual planning process (see the Biological Resource Planning BMPs) and guided as directed by wildlife biologists. Species habitat areas are defined by the District's GIS species mapping, updated CNDDB and known local biological information and are included in the SMP Update Subsequent EIR.

BMP Number	BMP Title	BMP Description
ANI-1	Avoid Redistribution of Rodenticides	Carcass surveys will be conducted periodically when acute poisons and first generation anticoagulants are used. The frequency of the carcass surveys will be specific to the type of rodenticide used, to minimize secondary poisoning impacts: • Acute toxins – Daily carcass surveys, beginning the first day after application until the end of the baiting period for acute toxins used above-ground. • Anticoagulants - Within 7 days of installation of first generation anticoagulant bait, and weekly thereafter. Anytime a carcass is found, daily carcass surveys will begin for as long as carcasses are found until no carcasses are found during a daily survey. Once no carcasses are found, carcass surveys will return to the weekly carcass survey timeline maximum from the date of initial installation of an anticoagulant bait station. To verify that the frequency of carcass surveys is adequate, a biologist will conduct daily carcass surveys 2 times per year over one baiting cycle. Based on the results of these surveys, the timing of carcass surveys will be adjusted if necessary. Any spilled bait will be cleaned up immediately.
ANI-2	Prevent Harm to the Salt Marsh Harvest Mouse and California Clapper Rail	1. No rodenticides or fumigants will be used within the range of the SMHM or CCR as identified on District range maps. 2. Methods of rodent control within SMHM or CCR habitat will be limited to live trapping. All live traps shall have openings measuring no smaller than 2 inches by 1 inch to allow any SMHM that inadvertently enter the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line.
ANI-3	Burrowing Owl, Bald Eagle and Golden Eagle Buffer Zone	Per the California Department of Fish and Wildlife's 2008 *Guidance for Burrowing Owl Conservation*, a 656-yard buffer will be established around known burrowing owl locations where no rodenticides or fumigants (including smoke bombs) will be used. A 0.5-mile buffer will be established around known bald eagle and golden eagle nesting locations where no rodenticides will be used.
ANI-4	Animal Control in Sensitive Amphibian Habitat	1. Fumigants will not be used within the habitat areas of special status amphibians. 2. The use of bait stations within the potential habitat areas of California red-legged frog, California tiger salamander, or foothill yellow-legged frog will be limited to bait stations specifically designed to prevent entry by these species. 3. Any live traps will allow California red-legged frogs, California tiger salamanders, or foothill yellow-legged frogs to safely exit (e.g., by having openings measuring no smaller than 2 inches by 1 inch).
ANI-5	Slurry Mixture near Waterways	All slurry type mixes used to fill rodent burrows will be prevented from entering any waterway by using appropriate erosion control methods and according to the manufacturer's specifications. If the creek bed is dry or has been dewatered, any material that has entered the channel will be removed.
ANI-6	Species requiring depredation permit	Animal Conflict Management will not include lethal control of species listed in California F&G Code Section 4181 inlcuding beaver and gray squirrel without first obtaining a depredation permit.

G. SECTION G – Use of Pesticides

Pesticides may be used for vegetation management or control of animal damage.

BMP Number	BMP Title	BMP Description
HM-4	Posting and Notification for Pesticide Use	Posting of areas where pesticides are used will be performed in compliance with District Policy Ad-8.2 Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. In addition, posting will be provided for any products applied in areas used by the public for recreational purposes, or those areas readily accessible to the public, regardless of whether the label requires such notification. In doing this, the District ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. (The posting method may be modified to avoid destruction of bait stations or scattering of rodenticide.) 3. These postings will notify staff and the general public of the date and time of application, the product's active ingredients, and common name, and the time of allowable re-entry into the treated area. 4. Signs will not be removed until after the end of the specified re-entry interval. 5. Right-to-know literature on the product will be made available to anyone in the area during the re-entry period. 6. A District staff contact phone number will be posted on the sign, including a cellular phone number. 7. Notification of pesticide activities will be made as required by law. Also, the District will maintain records of neighbors with specific needs relative to notification before treatment of an adjacent area so that such needs are met.

Source: Data compiled by Horizon Water and Environment in 2011

Appendix D – District Best Management Practices

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Appendix E

General Conditions of the Valley Habitat Plan Applicable to FAHCE Draft FHRP

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Chapter 6

Conditions on Covered Activities and Application Process

6.1 Introduction

As required by ESA (Section 10[a][2][A][ii]) and Fish and Game Code Sections 2820 (a)(6) and 2820(f), this Plan includes measures to avoid and minimize take of covered species. These measures to avoid and minimize impacts are described as *conditions on covered activities* and are designed to achieve the objectives listed below.

- Provide avoidance of covered species during implementation of covered activities throughout the study area.
- Prevent take of individuals from covered activities as prohibited by law (e.g., take of fully protected species).
- Minimize adverse effects on natural communities and covered species where conservation actions will take place.
- Avoid and minimize impacts on jurisdictional wetlands and waters throughout the study area.

In the context of effects on covered species, one of the greatest benefits of an HCP/NCCP is that mitigation for individual projects can be implemented systematically on a regional scale. This enables a more comprehensive approach to conservation that concentrates protection where it has the greatest value. The Plan also restricts covered activities in high-value land cover types (e.g., wetlands, serpentine grassland) and for some species (e.g., covered plants and selected covered wildlife species). By protecting high-quality areas in the Reserve System and restricting covered activities in areas of higher biological value, regional avoidance and minimization goals are supported.

This chapter describes conditions on covered activities that help meet regional avoidance and minimization goals. Regional avoidance and minimization reduces the need for individual projects to avoid and minimize impacts at the project scale and allows streamlining of regulatory requirements. This Plan assumes that take will result from individual covered activities and that this take will be mitigated through the conservation strategy (Chapter 5). Most activities covered under this Plan are required to provide limited documentation of field conditions to verify these assumptions (see Section 6.2 *Exemptions from Conditions*).

Avoidance and minimization measures are regulated by federal, state, and local programs. The conditions on covered activities (avoidance and minimization measures), described in this chapter do not supersede requirements by other agencies and are not intended to provide a basis for non-compliance with other applicable design guidelines required by other federal, state, and local agencies.

This chapter also describes the application process for individual projects to request coverage under this Plan. The application process is described in detail at the end of this chapter in Sections 6.7 *Receiving Take Authorization under the Plan* and 6.8 *Habitat Plan Application Package*. The conditions on covered activities and application process are included in this chapter together so that project proponents have one location in this document in which all requirements are described.

The NCCP Act requires that the Permittees get concurrence from the Wildlife Agencies before adopting, amending, or approving any plan or project that is inconsistent with the objectives and requirements of this Plan[1]. The conditions described in this chapter are designed to ensure this consistency and provide standard and predictable requirements for project applicants. However, Permittees may need to adopt or impose additional conditions beyond those described in this chapter for unanticipated projects or effects in order to ensure consistency with the Habitat Plan and compliance with the NCCP Act. The Permittees will evaluate all projects respective to their authorities to ensure that all applicable conditions described in this chapter have been incorporated into the project prior to extending take coverage under the Plan. Chapter 8 describes applicant responsibilities in the application process.

In addition to the conditions described in this chapter to avoid and minimize impacts, covered activities may also require payment of mitigation fees (see Chapter 9), provision of land in lieu of mitigation fees (see Chapter 8), or habitat restoration or creation in lieu of wetland fees.

6.2 Exemptions from Conditions

Many projects within the study area do not disturb the ground or have little or no measurable impact on the covered species or natural communities. Because the probability of take is so low, the need to enforce conditions on the projects and activities specified below would not provide a net benefit for species. Therefore, these covered activities are not subject to the conditions described in this chapter. Quantifiable impacts associated with activities exempt from conditions of the Habitat Plan will be reported in the Application Package (see Section 6.8, below) (impacts that cannot be quantified will not be tracked). Although these covered activities are exempted from the conditions, all of them receive take coverage (**Table 6-1**).

[1] Fish and Game Code Section 2820(b)(3).

Exemptions based on land cover types are based on the mapping for this Plan at the time of permit issuance and the nature of covered activities previously permitted on the site.

Many of the covered activities exempt from the conditions in this chapter may also be exempt from the Habitat Plan fees, as described in Chapter 9, Section 9.4.1 *Habitat Plan Fees*. The association between covered activities exempt from conditions on covered activities and Habitat Plan fees are shown in **Table 6-1**.

The following activities and projects are exempt from all of the conditions in this chapter and are not tracked as impacts by the Implementing Entity (as described above)[2].

- Projects that do not result in ground disturbance do not result in release of potential water quality contaminants, or do not create new wildlife barriers.
- Private-sector, routine-maintenance activities that require a development, grading, or building permit, and that occur inside the urban service area (private-sector activities that do not require a development, grading, or building permit are not covered by the Plan or its conditions or fees).
- Private-sector, routine-maintenance activities that require a development, grading, or building permit; that occur outside of the urban service area; and that occur within 50 feet of all existing structures at the time of Plan commencement or within 50 feet of structures that were permitted for incidental take under the Habitat Plan.
- Any covered activity described in Chapter 2 that occurs in urban-suburban, landfill, reservoir[3], or agriculture developed[4] land cover types as verified in the field, unless the activity may affect a mapped or unmapped stream, riparian, serpentine, pond, or wetland land cover types, or the activity is located in a stream setback (see Condition 11 for a discussion of stream setbacks).
- Routine infrastructure maintenance by public agencies within the planning limit of urban growth that do not affect stream, riparian, serpentine, ponds, or wetland land cover types.
- Routine infrastructure maintenance by public agencies that occurs in urban-suburban, landfill, reservoir, or agriculture developed land cover types that do not affect stream, riparian, serpentine, pond, or wetland land cover types. Examples of such activities include filling pot-holes and resurfacing existing roads without expansion of the paved area.

[2] Project proponents are still required to comply with survey and avoidance requirements for applicable local, state, and federal laws not addressed by the Habitat Plan (e.g., local tree ordinances, state fully protected species, the federal Migratory Bird Treaty Act).
[3] "Reservoir" does not include the dam face. Exemptions described in this chapter do not apply to projects impacting the face of covered dams.
[4] The land cover type "agriculture developed" (also known as agriculture developed/covered ag) is defined in Chapter 3 as intensive agricultural operations such as nurseries and greenhouses.

The following activities[5] are also exempt from all conditions in this chapter but will be tracked by the Implementing Entity as impacts when they occur on natural land cover types.

- Additions to existing structures or new structures that are within 50 feet of an existing structure (e.g., a new garage) that result in less than less than 5,000 square feet of impervious surface so long as no stream, riparian, wetlands, ponds, or serpentine land cover type are affected. Additions are cumulative and must be calculated based on the footprint of the structure at time of Plan implementation to determine whether this threshold has been crossed.
- A covered activity on a parcel of less than 0.5 acre or less as long as no serpentine, stream, riparian, pond, or wetland land cover type is within the parcel.

A project proponent of a covered activity in the Plan will not be required to comply with the conditions in this chapter or pay any Habitat Plan fees if the proponent of the activity provides written confirmation to the Implementing Entity that the CDFG and USFWS have determined that the activity is not subject to CESA and ESA, respectively; or has already received the necessary take authorizations under CESA and ESA; or has otherwise complied with CESA and ESA. An activity will be deemed to be in compliance with CESA and ESA by the Implementing Entity and thus be exempt from the conditions in this chapter and otherwise comply with the Habitat Plan if the proponent provides the following:

1. Letters from both USFWS and CDFG that specifically refers to the activity and states that the activity is not likely to result in take of any federally or state listed species and will not preclude successful implementation of the conservation strategy for all covered species, or
2. A copy of an incidental take permit issued by CDFG for the activity, and copies of incidental take statements or incidental take permits issued by USFWS that authorize the incidental take associated with the proposed activity.

Additional covered activities are exempt from species surveys, as described in Section 6.8.5 *Item 5: Results of Applicable Species Surveys and Monitoring*, below.

Activities or projects listed in Chapter 2, Section 2.4 *Projects and Activities Not Covered by this Plan*, are specifically excluded from coverage under this Plan and therefore cannot receive take authorization, are not subject to the conditions in this chapter, and do not pay Habitat Plan fees (see Section 2.4 for additional information on these excluded activities and projects). These projects are listed below.

[5] Although private development that does not meet the criteria described in Section 2.3.2 *Urban Development* subheading *Private Development Coverage Area* and additions of less than 5,000 square feet of new impervious surface (regardless of parcel size) are not subject to the Plan, project proponents may choose to opt into the Plan. If project proponents seek to have these activities covered, the bulleted exemptions apply.

- Private sector activities that do not obtain a development, grading, building, or other construction permit involving land disturbance for the purposes of making land improvements, such as the construction of buildings, roads, and driveways ("building permits" referenced herein do not include plumbing, electrical, or mechanical permits). Activities that do not obtain these development permits are not covered by the Plan.
- SCVWD Stream Maintenance Program activities.
- City of Gilroy expansion beyond the Plan's planning limit of urban growth.
- Bay Area to Central Valley high-speed train.
- New highway between I-5 and U.S. 101.
- Routine and ongoing agricultural activities or expansion of cultivated agriculture into natural land cover types, including vineyard development, that does not seek discretionary approval or permitting by the local jurisdiction.
- Timber harvest operations.
- Quarries and other mining other than expansion of Freeman Quarry (except as otherwise noted).
- New and expanded landfills other than Kirby Canyon, Pacheco Pass Landfill expansions, and landfills occurring inside the planning limit of urban growth of the three cities.
- Mercury removal/remediation (unless described in Chapter 2 as a covered activity).
- Corps led projects.
- Pacheco dam reconstruction and reservoir enlargement.
- Pesticide/ herbicide application for the federal permit.
- Installation and operation of groundwater wells (except as otherwise noted).
- Increased development due to incorporation of San Martin.
- Dam removal and/or construction of new dams.
- Wind farm development.
- Water importation from outside the SCVWD service area.
- Emergency activities.

6.3 Conditions on All Covered Activities

The conditions below are categorized and described in several ways: by activity type, by natural community, and by species. Collectively they provide for regional and site-specific avoidance and minimization of impacts on covered species and sensitive land cover types. It is the responsibility of project

proponents to design and implement their projects in compliance with these conditions. For private projects, the applicable local jurisdictions will review project compliance with the conditions in this chapter. The Local Partners will determine best adherence to conditions where discretion exists. If a project applicant proposes to use a less preferable design option (e.g., a culvert instead of a free-span bridge), the project applicant must demonstrate why a preferred option is infeasible. For private applicants, local jurisdictions will determine if this rationale is sufficient under these circumstances.

Conditions on covered activities, including avoidance and minimization measures identified for certain covered activities and species-specific measures, may be revised over the course of the permit term based on results of implementation through the adaptive management process. Proposed revisions will be reviewed by the Wildlife Agencies upon submission of each annual report to ensure the successful implementation of the conservation strategy. Agencies will review and respond within 30 days. Revisions to conditions will be approved by the Wildlife Agencies prior to the Permittees adopting revised conditions. Allowing such revisions will ensure that out-of-date or unsuccessful management techniques do not persist and that best available science can be incorporated into the conditions as appropriate for the Plan.

Compliance with the Habitat Plan does not preclude compliance with all other applicable state and federal laws. It is the project proponent's responsibility to ensure compliance with all applicable laws and regulations.

All projects that discharge dredged or fill material into waters of the United States, including federal jurisdictional wetlands, are required to obtain applicable permits (e.g., Clean Water Act Section 404 and Section 401) from the Corps and the Regional Board. Projects that place fill, alter the bed bank or channel, or divert the flow of streams, alter portions of streams above the ordinary high water mark, alter streams that lack a nexus to navigable waters, wetlands, or lakes under the jurisdiction of the state only are required to obtain a waste discharge requirement from the Regional Board and enter into a streambed alteration agreement with CDFG[6]. Any project that requires a permit from the Corps, Regional Board, or CDFG for impacts on streams and other aquatic areas may be subject to avoidance and minimization requirements. Those requirements may differ from the avoidance and minimization requirements in this Plan.

Condition 1, described below, pertains to all covered activities. Other conditions specifically pertain to certain types of activities, certain species, or certain natural communities and are enumerated in subsequent sections.

[6] Activities covered by this Plan that need a streambed alteration agreement are expected to fully meet the standards of the streambed alteration agreement through compliance with this Plan for species covered by the Plan.

Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species

Contra Costa Goldfields

Contra Costa goldfields is a federally endangered and CNPS 1B plant species whose extreme rarity precludes coverage under the Habitat Plan. Because the Habitat Plan does not cover the species, compliance is required on an individual basis.

The likelihood of discovery of new occurrences is very low. If a new occurrence of this species is found, its avoidance would be of the highest importance to the species' viability. If an applicant encounters Contra Costa goldfields on their site, they will contact the USFWS for written concurrence of avoidance to ensure that the project does not jeopardize the continued existence of the species.

Wildlife Species Protected Under Other Laws

Several wildlife species that occur in the study area are listed as fully protected, as defined under Sections 3511 and 4700 of the California Fish and Game Code. As described in Chapter 1, CDFG cannot issue permits for take[7] of these species. Fully protected species that are known or likely to occur in the study area are listed below.

- Golden eagle.
- Bald eagle.
- American peregrine falcon.
- Southern bald eagle.
- White-tailed kite.
- California condor.
- Ring-tailed cat (= ringtail).

Three of the fully protected raptor species—white-tailed kite, peregrine falcon, and golden eagle—forage widely throughout the study area but nest in discrete locations. Bald eagles are rare winter migrants to Santa Clara County but have been known to breed in the San Francisco Bay Area. A California condor population has been established in San Benito County (Pinnacles National Monument) and birds forage occasionally in Santa Clara County. Additionally, ringtails may be found in some riparian woodlands in the study area.

Further, all migratory bird species and their nests are protected under the Migratory Bird Treaty Act (MBTA). All birds listed above and those covered by

[7] Take is defined more narrowly in the California Fish and Game Code than in the ESA; see Chapter 1, *Introduction*, for details.

the Plan (western burrowing owl, least Bell's vireo, and tricolored blackbird) are considered migratory birds and subject to the prohibitions of the MBTA. Actions conducted under the Plan must comply with the provisions of the MBTA and avoid killing or possessing covered migratory birds, their young, nests, feathers, or eggs. As described in Chapter 1, the ESA incidental take permit, once issued by USFWS, will automatically function as an MBTA Special Purpose Permit, as specified under 50 CFR Sec. 21.27, for least Bell's vireo (the only migratory bird listed as threatened or endangered under the ESA) for a 3-year term subject to renewal by the Permittees (see Appendix 5 in U.S. Fish and Wildlife Service and National Marine Fisheries Service 1996). Should any other of the covered migratory birds become listed under the ESA during the permit term, the ESA permit would also constitute a Special Purpose Permit under the MBTA for that species for a 3-year term subject to renewal by the Permittees.

Golden eagle and bald eagle are also protected under the Bald and Golden Eagle Protection Act. Take of golden eagle or bald eagle includes "impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment" (72 FR 31133).

6.4 Conditions on Specific Covered Activities

Conditions 2–10 pertain to seven specific categories of covered activities: urban development, in-stream capital projects, in-stream operations and maintenance, rural capital projects, rural operations and maintenance, rural residential development, and Plan implementation.

6.4.1 Urban Development

Urban development is defined as development occurring inside the urban service area of the three Local Partner cities. Although urban development is assumed in the impact analysis to occur throughout the planning limit of urban growth of each city over the 50-year Habitat Plan permit term, the density of development is not assumed to be urban unless the area is also inside of the urban service area.

There are two conditions on new urban development required by the Plan. Conditions on urban development are limited because of the generally low biological value of resources within urban areas[8]. The two general exceptions are the urban fringe and stream resources. Condition 2 below addresses the edge of new urban development in relationship to the Reserve System; in-stream activities are addressed in subsequent conditions.

[8] See Chapter 3 for the rationale for this assumption and Chapter 5 for identification of selected sites in urban areas with high-value resources.

Condition 2. Incorporate Urban-Reserve System Interface Design Requirements

For the purposes of this Plan, the urban-Reserve System interface is defined as the zone between existing and future urban development and the Reserve System. Because the study area includes three cities, development is anticipated adjacent to the Reserve System in some locations. Because of the influence of urban land uses it is anticipated that some areas generally unsuitable for covered species will border some of the Reserves. Urban buildout adjacent to reserves has the potential to directly or indirectly adversely affect covered species and natural communities within the Reserve System. Sources of such adverse effects may include vandalism, dumping of trash, trampling, unauthorized mountain bike or off-road vehicle use; runoff from adjacent streets and landscaped areas containing lawn fertilizer, pesticides, and vehicle waste (petroleum byproducts); introduction of invasive nonnative species (e.g., pampas grass, French broom, Argentine ants, giant reed); lights and noise from nearby development; unregulated movement of domestic animals; and the potential for covered species to enter developed or urban areas.

Beyond minimizing such direct and immediate impacts, the design of the urban-Reserve System interface will consider indirect and long-term effects, such as runoff from developed areas[9] that can transport harmful substances (e.g., pesticides, automotive fluids, sediment) into reserves; establishment of invasive nonnative species that can disperse from nearby landscaped areas; and structural and biological damage (e.g., soil compaction, creation of unauthorized trails, disturbance of sensitive species) that can result from unmanaged human access and use.

The interface design will address the following key questions, which are based on those proposed by Kelly and Rotenberry (1993) for urban reserves in California.

- What external forces or processes may have a negative impact on covered species and habitats at or near the reserve boundary?
- To what extent are those external forces likely to penetrate the boundary and result directly or indirectly in negative impacts on covered species and habitats? (How permeable is the boundary?)
- Which covered species are likely to exit the reserve and expose themselves to increased risk of injury or death?
- What structures can be built or programs implemented to prevent or mitigate these impacts? For example, how can boundary permeability be altered?

With these questions in mind, site-specific interface design requirements were developed to reduce negative impacts of development on covered species and to

[9] In general, development in the permit area will occur downslope from Habitat Plan reserves, so runoff should flow away from reserves. However, because construction grading often alters local drainage patterns, some runoff could flow into reserves if precautions are not taken.

help reduce conflicts if wildlife moves outside the Reserve System. The following sections (*Design Requirements*) describe requirements and opportunities for reducing impacts on covered species and natural communities on Reserve System lands adjacent to urbanized areas.

Design Requirements

New urban development that occurs adjacent to reserves or areas with moderate or high priorities for land acquisition (see Chapter 5, Section5.3.1 *Land Acquisition and Restoration Activities*) will incorporate design requirements at the urban-Reserve System interface to minimize the indirect impacts of development adjacent to existing reserves. The relevant jurisdiction (city or County) will determine which development projects are subject to this condition, as well as which components may be required for a particular development. The Implementing Entity will provide technical assistance when needed. Design requirements to be incorporated in new development at the urban-Reserve System interface, include those listed below.

- Locate the proposed development as far from the reserve boundary as possible consistent with other onsite conditions and constraints.
- Where new development occurs, roads will be placed on the interior of the development (i.e., away from the reserve boundary) to reduce the incidence of domestic pets entering the reserves and to isolate this hazard for wildlife that might enter urban areas from the reserves.
- Fences adjacent to yards or home sites will be designed to minimize the risk of pets escaping private yards and entering reserves (e.g., fences will be as tall as permitted by city and county codes, with no spaces between slats).
- Fences shared with reserve boundaries will not contain any gates between the private property and reserve to prevent entrance and trampling of sensitive species or illegal dumping (legal access to reserves will be provided at recreation staging areas).
- No private gates into the Reserve System will be allowed unless required by a pre-existing access easement and identified as an exception by the Implementing Entity.
- Public roads adjacent to reserves (e.g., a road that is aligned parallel to a reserve boundary) will be fenced to reduce unauthorized public access. Locked gates will be inspected regularly to identify any unauthorized locks.
- Development will be designed to minimize the length of the shared boundary between urban areas and the reserves (i.e., minimize the urban edge).
- Outdoor lighting will be of low intensity and will utilize full cutoff fixtures to reduce light pollution of the surrounding natural areas.
- Use of high-intensity lighting (e.g., recreation facilities, commercial parking lots) near reserves will be avoided or, if necessary, placed as low to the

ground as possible and directed away from the reserves to minimize long-distance glare.

- Public facilities such as ballparks and fields that require high-intensity night lighting (i.e., floodlights) will be sited at least 0.5 mile from the reserve boundary to minimize light pollution. Facilities may be sited closer to the Reserve System if the Implementing Entity determines that the lighting system will not be intrusive to wildlife within the Reserve System (e.g., hills block the lighting).
- For any landscaping, non-invasive plants will be required and use of native plants is highly encouraged, consistent with County landscaping guidelines (County of Santa Clara 2009).
- Natural or artificial barriers or other access restrictions may be installed around development to protect sensitive land cover types and covered species in the reserves. Barriers will be designed so they are appropriate for site conditions and resources protected. Some barriers should keep undesirable pets outside of the Reserve, other barriers should keep covered species inside the Reserve, while others should do both. Before installation of a barrier, consider if the area is used by covered species for movement, if the barrier would prevent movement critical for species life cycle, or if the barrier would encourage species to use other less favorable crossings.

Any design requirements incorporated into projects at the urban-Reserve System interface will be located within the development (i.e., not on the Reserve System) with the exception of the fuel buffer described in Condition 10 below. These features will be maintained by the property owners. The Implementing Entity will monitor compliance with these conditions along the reserve boundary concurrent with other monitoring activities described in Chapter 7. Violations will be reported to the applicable local jurisdiction for enforcement.

Although they are not under obligation or requirement, existing developments located adjacent to reserves or lands identified as land acquisition targets for Plan reserves are encouraged to adopt and implement as many of these design requirements as practicable. Local jurisdictions are encouraged to notify and involve the Implementing Entity during the design review process for large projects planned adjacent to the Reserve System.

In addition to the requirements identified above, several other requirements and avoidance and minimization measures are applicable to development near reserves. Project proponents will comply with the following conditions as appropriate.

- Condition 3. *Maintain Hydrologic Conditions.*
- Condition 7. *Rural Development Design and Construction Requirements.*
- Condition 10. *Fuel Buffer*.

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality

This condition applies to all projects. The implementation of these projects could result in impacts on watershed health through changes in hydrology and water quality.

Currently, all Permittees have stormwater management plans that regulate new development and redevelopment as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. An amendment to the Clean Water Act, the NPDES Program is a compliance permit regulating any point source pollution that is discharged into waters of the United States. The San Francisco Bay Regional Board administers the NPDES program in for the Coyote and Guadalupe watersheds. The Central Coast Regional Board administers the NPDES program for the Pajaro Watershed which includes Uvas, Llagas, and Pacheco subbasins. The purpose of this condition is to identify a consistent approach for applying the most important water quality conditions of each Regional Board across the study area (North and South County).

Site Design and Avoidance and Minimization Measures

Through development of stormwater management plans and complementary guidance manuals (Santa Clara Valley Urban Runoff Pollution Prevention Program 2006; City of Gilroy 2004; City of Morgan Hill 2004, 2008; Santa Clara Valley Water Resources Protection Collaborative 2006; Santa Clara Valley Water District 2008), the Permittees have identified a set of programmatic avoidance and minimization measures, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality including during project construction. These avoidance and minimization measures originated, in part, from the measures that area typically required by the Regional Boards and CDFG for projects that have the potential to affect aquatic resources. Many of these avoidance and minimization measures also support the biological goals and objectives of this Habitat Plan. Implementation of these avoidance and minimization measures will reduce the potential for adverse impacts on covered species. **Table 6-2** lists avoidance and minimization measures for all water-related covered activities described in Condition 3, 4, and 5 of this Plan. Each local jurisdiction, or the Implementing Entity in the case of projects conducted by the Permittees, will verify that all appropriate measures in **Table 6-2** are implemented to minimize effects to covered species and their aquatic habitat (see Section 6.8.6). **Table 6-2** lists the source control measures and avoidance and minimization measures from the Permittees' existing stormwater management plans and complementary manuals that are most effective in protecting covered aquatic species and aquatic species habitat.

The requirements listed in **Table 6-2** include general, project design, construction, and post-construction avoidance and minimization measures. Project design measures are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources and the reduction of impervious surfaces. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for municipal operations, stormwater treatment, and flow control.

In addition to the avoidance and minimization measures identified above, several other avoidance and minimization measures are identified in other conditions that will help reduce potential impacts to water quality in the study area. Project proponents will comply with the following conditions as appropriate.

- Condition 2. *Incorporate Urban Reserve System Interface Design Requirements*.
- Condition 4. *Stream Avoidance and Minimization for In-Stream Projects*.
- Condition 5. *Avoidance and Minimization Measures for In-Stream Operations and Maintenance*.
- Condition 7. *Rural Development Design and Construction Requirements.*
- Condition 8. *Implement Avoidance and Minimization Measures for Rural Road Operations and Maintenance.*
- Condition 11. *Stream and Riparian Setbacks*.
- Condition 12. *Wetland and Pond Avoidance and Minimization*.

6.4.2 In-Stream Projects

In-stream projects—such as flood protection projects, construction of new bridges and repair or rehabilitation of existing bridges or culverts, and water supply capital projects—have the capacity to affect wildlife, aquatic species, and habitats by introducing sediment discharge, disturbing earth and riparian vegetation, and altering hydrologic and hydraulic characteristics of water bodies. Condition 4 is designed to address such impacts.

Several of the in-stream covered activities described in Chapter 2 are also covered activities under the SCVWD proposed Three Creeks HCP. The conditions described below for in-stream projects, as well as for stream and riparian habitat and associated covered species (e.g., Condition 16), are consistent with the Three Creeks HCP.

Condition 4. Avoidance and Minimization for In-Stream Projects

The primary purpose of this condition is to identify design requirements and construction practices for in-stream projects to minimize impacts on riparian and aquatic habitat. The term *in-stream* is defined for the purposes of this Plan as the stream bed and bank and the adjacent riparian corridor. The adjacent riparian corridor encompasses all mapped riparian land cover (i.e., riparian forest and scrub natural community) immediately adjacent to a stream (see **Figure 3-10** for mapped land cover types). All in-stream projects must be designed to minimize adverse impacts on stream morphology, aquatic and riparian habitat, and flow conditions. Projects that may also affect wetlands or pond areas are addressed in Condition 12, *Wetland and Pond Avoidance and Minimization*.

All in-stream projects, including projects occurring in dewatered reservoirs, will adopt design requirement and construction avoidance and minimization measures to minimize impacts on covered species, natural communities, and wildlife movement. SCVWD and other Local Partners, such as County Parks, have developed avoidance and minimization measures for projects occurring in streams. The Fishery Network of Central California Coastal Counties (called "FishNet 4C" for the original four counties involved) developed the *County Road Maintenance Guidelines for Protecting Aquatic Habitat and Salmon Fisheries* (Fishery Network of Central California Coastal Counties 2004). This manual, while focused on road maintenance activities, provides avoidance and minimization measures that are applicable to all types of in-stream construction activities. **Table 6-2** summarizes these collected avoidance and minimization measures that are required conditions of in-stream covered activities. Avoidance and minimization measures in this table are applicable to the covered activities addressed in this condition as well as in Condition 3, *Maintain Hydrologic Conditions and Protect Water Quality* and Condition 5, *Avoidance and Minimization Measures for In-Stream Operations and Maintenance*. The avoidance and minimization measures address construction staging, dewatering, sediment management, vegetation management, bank protection, drainage, trail construction, and ground disturbance.

All avoidance and minimization measures listed in **Table 6-2** are required unless the avoidance and minimization measure is not appropriate for the activity or field data collected at the site or in comparable areas demonstrate that the avoidance and minimization measure would not benefit wildlife or reduce impacts on natural communities. The Implementing Entity will update the avoidance and minimization measures in **Table 6-2** over time so that they are more appropriate for implementing a specific covered activity or more beneficial for the covered species. Therefore, the Implementing Entity will update this list of avoidance and minimization measures over the permit term as appropriate to reflect new science and avoidance and minimization measure monitoring results. Proposed revisions will be reviewed by the Wildlife Agencies upon submission of each annual report to ensure the successful implementation of the conservation strategy. **Table 6-2** also includes additional avoidance and minimization measures drawn from those currently used by the Local Partners that strive to

reflect current and forthcoming regulations and guidelines for in-stream project design (e.g., the State Water Board's *Wetland and Riparian Area Protection Policy*, described below).

Types of Projects Subject to Condition

The in-stream projects listed below are subject to the design requirements or construction practices because they are expected to result in impacts on creeks or streams.

- Installation or rehabilitation of flood protection projects and levee reconstruction.
- Bank stabilization projects.
- Geomorphic rehabilitation.
- Gravel enhancement.
- Bridge construction and replacement including vehicular, train, and pedestrian bridges throughout the study area.
- Development of trails in or through the in-stream area (stream bed, banks, and adjacent riparian land cover).
- Culvert installation or replacement.
- Dam repair and seismic retrofit, including dewatering events and development of borrow sites.
- Restoration projects throughout the study area, including creek realignment and erosion management.
- Operation, maintenance and replacement of existing water supply structures such as stream gauges, percolation ponds, and diversions.
- Any other activity that requires construction work within the in-stream area (stream bed, banks, and adjacent riparian land cover).

Design Requirements

Some impacts on stream and riparian land cover types are expected under the Plan (see **Tables 4-2 and 4-3**). All covered activities subject to this condition will implement the measures listed in **Table 6-2** associated with this condition to avoid or minimize impacts of covered activities on streams and riparian woodland/scrub.

- Applicants must also comply with Condition 7 *Rural Development Design and Construction Requirements* where applicable.
- Applicants for projects with streams on site must follow the setback requirements in Condition 11, *Stream and Riparian Setbacks*.

- Applicants for projects with wetlands or ponds on site must comply with Condition 12, *Wetland and Pond Avoidance and Minimization*.
- Applicants for transportation improvements that include stream crossings must comply with Condition 6, *Design Requirements for Covered Transportation Projects*.

Design Criteria for SCVWD Flood Protection Projects

Flood protection projects shall be designed with an objective to protect or enhance natural channel and habitat functions. Designs will be developed and selected to maintain or improve bank stability, minimize bed degradation or aggradation, protect or improve streambed substrate conditions, protect or increase habitat diversity and complexity, and minimize required maintenance. All covered flood control projects will incorporate the following design elements:

1. Flood protection projects will incorporate support for natural stream functions and allow for natural stream processes to occur consistent with the flood protection goals of the project. Approaches for flood protection will generally include excavation of flood benches based on natural geomorphic conditions, off-stream detention, set-back levees or floodwalls, biotechnical bank stabilization methods, and grade control.
2. Project design alternatives will consider habitat connectivity between the stream and the adjacent floodplain as an objective.
3. Project design alternatives will incorporate native riparian vegetation and in-stream habitat enhancement features, where feasible. Potential enhancement features will be evaluated during the project design review process described below.
4. Bypasses that convey all or a portion of flood flows into channels, tunnels, culverts, or other areas that are isolated from the natural stream will be used only when other options have been evaluated and found infeasible to meet flood protection goals. If used, bypasses will be designed considering local geomorphic and flood characteristics and will minimize impacts to in-stream habitat.

Review Process for Covered Flood Control and Levee Reconstruction Projects

1. Flood control and levee reconstruction projects shall be reviewed by the Wildlife Agencies as described in Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities*.
2. During the 60% project design stage(s), review and input from the Wildlife Agencies shall be solicited.
3. The Wildlife Agencies providing review will return comments within a mutually agreeable timeline to maintain project schedule. As described in Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities*, the Wildlife Agencies must review and approve flood control projects to ensure that they are consistent with Habitat Plan requirements.

Requirements for SCVWD Dewatering Events

The following conditions apply to the dewatering events conducted at SCVWD covered reservoirs. Dewatering events *are necessary* for seismic safety retrofit and major maintenance (see Chapter 2 for a description of these covered activities). Due to the unique characteristics at each dam site, a reservoir-specific dewatering plan will be submitted to the Wildlife Agencies for review and approval prior to the first dewatering event for each reservoir (see Chapter 8, Section 8.7.3 *Wildlife Agency Responsibilities* for details of this process). Dewatering plans will be reviewed and, if appropriate, updated prior to subsequent dewatering events during the permit term. Dewatering plans will address various issues as requested by the Wildlife Agencies during the covered activity review process or as required by the environmental compliance process and will include the following.

- Timing for the initiation and duration of the dewatering event, including the draining and refilling stages of the dewatering event.
- Average, minimum, and maximum flows expected during draining and refilling (flows will be within the limits described in **Table 2-4**) including the duration of periods in which the maximum reservoir release may be made.
- A schedule for re-operation according to applicable rules curves.
- The ability of SCVWD to bypass water or provide other supplemental sources downstream.
- Documentation of in-channel dryback conditions from the previous 3 years, if feasible, and an evaluation of potential increases in the length and duration of dryback related to the dewatering event.
- A qualitative assessment of total flows that could occur downstream of the dam when taking into account stream inflows other than reservoir releases (e.g., stormwater, urban runoff) based on monitoring done during the previous years to assess the level of potential dryback.
- A description of baseline monitoring conducted for California red-legged frog, foothill yellow-legged frog, and western pond turtle in channels to be affected by the drawdown to establish presence of covered species in the channel.
- A description of anticipated effects of the dewatering event on covered species.

In addition, minimization measures included in a dewatering plan could include, but are not limited to, the following.

- Releases will not result in the overtopping of the channel between May and July when western pond turtles are nesting.
- SCVWD will bypass reservoir inflow around the dam and/or provide other supplemental flows downstream of the reservoir.
- SCVWD will consider installing outlets that provide better control over release volumes (beneficial for subsequent dewaterings).

- SCVWD will ramp increases and decreases in flows during dewatering to avoid washing covered species downstream or drying back the channel faster than covered species can adapt and move to new locations.
- Surveys for covered species as required by this chapter prior to re-filling of the reservoir or other construction activities if the reservoir basin has been undisturbed for a period of time. Surveys may be limited to areas that were not disturbed during construction or that were not inundated before construction but may be after construction.
- As reservoir levels decline, the gravel trap at the upstream end of the reservoir, if present, will be isolated and lined to contain inflow to provide for a relocation site for rescued native fish, amphibians, and/or western pond turtle.
- The lined gravel traps will be designed to allow bypass of inflow through or around the reservoir.

6.4.3 In-Stream Operations and Maintenance

In-stream[10] operations and maintenance activities covered under this Plan—such as sediment removal, bank stabilization, vegetation management, and debris blockage removal to maintain flows—have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways or by disturbing riparian land cover associated with streams. Condition 5 specifies avoidance and minimization measures for covered operations and maintenance activities within and immediately adjacent to the stream channel. Note that SCVWD's Stream Maintenance Program is not a covered activity under this Plan and therefore not subject to the conditions of this chapter of the Plan.

Condition 5. Avoidance and Minimization Measures for In-Stream Operations and Maintenance

The purpose of this condition is to identify avoidance and minimization measures to be applied when conducting in-stream operations and maintenance activities. The measures will help reduce impacts on stream and riparian land cover types and covered species.

Types of Projects Subject to Condition

The following in-stream operations and maintenance activities are subject to the measures or construction practices described below because they are expected to result in impacts on creeks or streams.

[10] *In-stream* is defined for the purposes of the Plan as, "the stream bed and bank and the adjacent riparian corridor."

- Facility maintenance such as trail, bridge, road, and culvert repair and/or replacement in in-stream areas.
- Natural resource protection such as small bank stabilization projects and removal of debris deposited during flooding.
- Operations and maintenance of flood protection facilities (e.g., dams, armored creeks, detention ponds, streams). Activities may include vegetation management, minor sediment removal, or bank stabilization.
- Operations and maintenance of water supply facilities (e.g., flashboard dams, inflatable dams, stream gages, pipelines, and diversions).
- Non-routine stream maintenance activities conducted by SCVWD (i.e., those activities not covered by SCVWD's Stream Maintenance Program) including extensive removal of vegetation in the Lower Llagas flood control channel.
- Removal of debris blockages except in emergency situations.
- Mitigation and/or monitoring in creeks or adjacent riparian corridors.
- Vegetation management for exotic species removal, such as removal of giant reed, and native vegetation plantings.
- Reservoir dewatering events.
- Reservoir filling.

Avoidance and minimization measures listed in **Table 6-2** will apply to all streams in the project areas as well as to open canals, because these canals may provide habitat for covered species.

Stream Operation and Maintenance Activities

Several of SCVWD's Stream Maintenance Program avoidance and minimization measures were adapted for inclusion in **Table 6-2** and will be adopted for this Plan. Additional avoidance and minimization measures are identified below to ensure adequate avoidance and minimization of species covered under this Plan during implementation of stream operations and maintenance covered activities. These avoidance and minimization measures were informed by sources that include the Santa Clara Valley Resources Protection Collaborative *Guidelines and Standards* (Santa Clara Valley Water Resources Protection Collaborative 2006) and the SCVWD *Best Management Practices Handbook* (Santa Clara Valley Water District 2008). Throughout the permit term, avoidance and minimization measures listed in **Table 6-2** will be updated through the adaptive management process to reflect current best practices.

Dam Maintenance Program

All applicable measures in **Table 6-2** will apply to implementation of activities associated with the Dam Maintenance Program (see Chapter 2). In addition,

activities requiring reservoir dewatering will comply with the requirements for dewatering reservoirs described above under Condition 4 *Stream Avoidance and Minimization for In-Stream Projects* and in Chapter 2.

Pipeline Maintenance Program

While SCVWD's Pipeline Maintenance Program is described in Chapter 2 under Section 2.3.6 *Rural Operations and Maintenance*, some activities have the potential to affect aquatic resources, particularly at blow-off sites. The following avoidance and minimization measures are from SCVWD's Pipeline Maintenance Program Final Program EIR (MHA Environmental Consulting 2007) and will be applied to Pipeline Maintenance Program covered activities in addition to other applicable avoidance measures described in this chapter.

- The discharge location and receiving water will be observed for signs of erosion by a trained individual. If erosion is evident, flow rates will be reduced. If erosion continues to occur, discharges will be terminated until appropriate erosion control measures are installed. Monitoring will be conducted just prior to the start of the discharge and regularly (i.e., every hour, every four hours, every eight hours) during the discharge. Monitoring frequency will depend on the nature of the discharge and the erosion in the area.
- An environmental monitor will walk along each discharge drainage to the termination of the drainage or 500 feet downstream to inspect for erosion after a draining is complete. If erosion is detected, reclamation measures will be taken to correct the erosion. Correction measures shall include recontouring the land to its previous state and revegetating with the appropriate native grass species in the area, if necessary.
- Discharge rates will be ramped up slowly such that the increase in flow rate in the receiving water is gradual and scouring of the channel bed and banks does not occur.
- Flows will be diverted around sensitive, actively eroding, or extremely steep areas to prevent erosion. Flow diversion methods might include use of flexible piping and/or placement of sandbags to alter flow direction, or equivalent measures. The new flow path and discharge point will be monitored for signs of erosion.
- Pipeline discharge for maintenance work would preferentially be performed during winter months, when storm events are more common and when water is naturally highest. Discharge flows are then a minimal portion of overall stream or river flow. If draining must occur during summer or fall, a slow release is mandatory to ensure receiving waters do not experience a substantial temperature change (greater than 2 degrees Fahrenheit).

6.4.4 Rural Projects

Rural projects include transportation projects, the South County Airport expansion, the Kirby Landfill expansion, construction of large new recreation facilities (e.g., golf course, sports fields, and extensive picnic areas), capital water supply projects, and private rural residential and commercial development. These rural projects have the potential to affect covered species by removing substantial areas of habitat, disrupting hydrologic patterns, contributing to habitat fragmentation, discharging sediment into water bodies, and resulting in direct mortality of covered species. Conditions 6 and 7 are designed to reduce the severity of such impacts for rural projects.

Condition 6. Design and Construction Requirements for Covered Transportation Projects

This condition identifies design requirements to minimize the impacts of transportation projects on wildlife movement, occurrences of certain covered species, and important habitat for covered species. All road and rail transportation projects (including the BART extension), or portions thereof, outside streams and within the planning limit of urban growth are exempt from this condition. Road projects in these areas are either within participating cities (i.e., urban areas) or within adjacent County jurisdiction, both of which support relatively dense suburban development. Road projects in these areas are not expected to significantly affect wildlife linkages, occurrences of covered species, or habitat for covered species. All covered transportation projects that cross streams or creeks, including bridges, are subject to Condition 4 above.

Four new road extensions/connections/realignments are proposed outside the planning limit of urban growth during the permit term of this Plan. However, many road improvements, including road widenings, are covered by the Plan (see **Table 2-6**). One new mass transit project is covered by the Plan: the double tracking of the Caltrain line from San José to Gilroy along the existing corridor.

Exempt Transportation Projects

The following projects are not subject to the design requirements or construction practices specified in this condition because they are not expected to result in new ground disturbance and are not expected to create new wildlife movement barriers or augment existing barriers.

- Installing traffic signals, signs, pavement markings, flashing beacons, or other safety warnings.
- Painting new lane striping.
- Installing “rumble” strips, channelizers, or other safety markers.
- Installing guardrails or similar structures that are permeable to wildlife.

- Installing ramp metering.
- Regrading existing shoulders (this activity is considered maintenance; see Condition 8).
- Implementing other road safety improvements on less than 1,000 feet of roadway.

All transportation projects that cross creeks are subject to Condition 4 above.

The following projects are also exempt from this condition, due to their small footprint, if the project does not include installation of median barriers or other impermeable safety barriers, and if no mapped or unmapped stream, riparian, serpentine, pond, or wetland land cover types are present, and if the activity is not located in a stream setback. Project lengths must be calculated based on the all new adjacent projects constructed since the time of Plan implementation to determine whether the below thresholds have been crossed.

- Widening roads to add lanes where the project is less than or equal to 1,000 feet in length.
- Realigning roads for safety or operational purposes where the project is less than or equal to 1,000 feet in length.
- Constructing new turn lanes less than or equal to 1,000 feet in length.
- Constructing a new road shoulder less than or equal to 1,000 feet in length.

Outside the planning limit of urban growth transportation projects will adopt design requirements and construction practices to minimize impacts on covered species, natural communities, and wildlife movement (see below). Depending on the type of project, these design requirements and construction practices would be *required* or *possible* (**Table 6-3**).

- **Required** (R). Design element or construction practice is required.
- **Possible** (P). Design element or construction practice is required unless field data collected at the site or in comparable areas demonstrate that the element or practice would not benefit wildlife, and CDFG and USFWS concur with the findings.

Types of Projects Subject to Condition

The following projects are subject to the design requirements or construction practices because they are expected to result in new ground disturbance, or they may create new wildlife movement barriers or augment existing barriers. Each project category is subject to a specific combination of requirements listed below and in **Table 6-3**.

Highway Projects

Highway projects are those VTA projects identified in **Table 2-6** as highway projects that call for the expansion of existing highways within the study area.

Mass Transit Projects

The single mass transit project identified for coverage in this Plan is the VTA project identified in **Table 2-6** as *Caltrain South County* which calls for the double tracking of the existing Caltrain corridor.

Roadway Projects and Interchange Upgrades

Major roadway projects and interchange upgrade projects (major roadway projects) are those projects identified in **Table 2-6**. All non-exempt Santa Clara County roadway projects and VTA interchange upgrades identified in **Table 2-6** are subject to the conditions identified **Table 6-3**.

Road Safety and Operational Improvements

These projects include the road projects described in Section 2.3.5 *Rural Capital Projects* that are not listed in **Table 2-6**. Road safety and operational improvements are expected to involve ground-disturbing activities but are not expected to impede or substantially worsen wildlife linkage. However, there may be opportunities for some projects to improve wildlife linkages. These projects are subject to construction and post-construction practices but not to project design requirements (**Table 6-3**).

Dirt Road Construction

Dirt roads may be constructed by the Permittees or private landowners to access their property. These projects are subject to construction and post-construction practices but not to project design requirements (**Table 6-3**).

Pre-Design Data Collection for Wildlife Movement

For transportation projects with the greatest potential to affect wildlife movement (see **Table 6-3** and lists above), it will be important to incorporate requirements that minimize the projects' adverse impacts on wildlife movement. In some cases, transportation projects may present opportunities to upgrade existing structures to improve wildlife movement. For these upgrades to be most effective, they will be supported by data describing movement of wildlife at or near the project site and the likelihood of vehicle collisions based on traffic patterns.

To facilitate better project design and to avoid delays in project construction due to the data collection process, the Implementing Entity will establish a long-term data collection program on wildlife movement in the study area. The primary goal of this program will be to determine the movement patterns of key covered species and other native wildlife throughout the study area. Data collection stations will be established at points along covered transportation projects that are most likely to affect wildlife movement. Wildlife movement will be studied at key sites to determine which species move through the area, when they move and, most importantly, which landscape features are most often used. Techniques used for data collection will vary by site and target species but may include remote cameras, wildlife track pads, and roadkill observations. This program is described in greater detail in Chapter 5. It is expected that several

years (or decades) of data will be available to inform project design by the time that many of these projects reach the design stage. (This monitoring program is in addition to the wildlife corridor feasibility study discussed in Chapter 5.)

Data collection will be required on wildlife movement along the applicable project corridor for at least 1 year prior to project design. These data will be used to select the design requirements most appropriate for the species and conditions particular to the site (see below). If the Implementing Entity has not collected data in the project vicinity and the project timeline does not permit new data collection, then the applicant must apply all the design guidelines on the basis of the best available information for the region and appropriate to the conditions at the project site.

Transportation project applicants will coordinate with the Implementing Entity and Wildlife Agencies on applicable projects as indicated in **Table 6-3** during the conceptual design phase to ensure that as the project moves from conceptual to final design, the project meets the terms of this Plan.

When multiple road expansions are planned for a roadway during the permit term, wildlife crossing needs will be considered for each roadway as a whole, not by road segment. Further, design requirements will be considered for each wildlife species likely to cross the facility (Barnum 2003). These data will inform the design of wildlife movement structures suitable for the site and the species that use the area. In addition, after each project component is installed, wildlife activity along the road will be monitored to assess how wildlife responded to the project, if behavior has changed, and if additional design considerations will be utilized as future projects are implemented along the roadway.

Transportation Project Design Requirements

To reduce the impacts of construction activities on natural communities and native species within the study area, the design requirements listed below will be implemented for applicable transportation projects (**Table 6-3**). Design requirements are based on the latest techniques for minimizing impacts of transportation projects (Forman et al. 2002; Irwin et al. 2003; Finch 2004; Hilty et al. 2006). Some design requirements may be updated by the Implementing Entity if the best available science indicates that such updates would be more effective at facilitating safe wildlife movement across transportation corridors. Because the effectiveness of road crossings designed for wildlife is an active area of research, frequent advances in design are expected throughout the permit term.

- **Enhance existing undercrossings.** When road expansion projects span an undercrossing, such as a culvert, existing undercrossing structures will be enhanced within safety or engineering limitations to allow for fish and wildlife movement. Existing culverts or other potential crossing points will be enhanced if results of data collection indicate that the existing structure is inadequate. The design requirements of replacement structures will be

determined by the species that have been documented using or attempting to use the site. Wildlife crossings that can serve multiple species will be used whenever possible.

- **Crossing enhancements.** Crossing enhancements must incorporate design requirements identified for culverts in Condition 4, *Stream Avoidance and Minimization for In-Stream Projects*.
- **Minimum sizing of culverts.** Culverts must be the minimum length, height, and width necessary to provide safe passage under the road for the target species present at the site (based on data collected as described above). Culvert designs will be based on the best available data at the time. Current recommendations are that culverts designed for medium-size mammals (e.g., San Joaquin kit fox, coyote, raccoon) be 5–8 feet in diameter (although culverts larger than 8 feet in diameter may be needed for longer crossings). Culverts designed for small mammals or amphibians are recommended at 18–48 inches in diameter. Culverts will provide a natural substrate on which wildlife can travel (e.g., open bottom box culvert) when such designs are compatible with the hydrologic needs of the culvert.
- **Install grating to allow ambient light to penetrate undercrossing.** Culverts will include grating on the inactive part of the roadbed (e.g., road shoulders or median) to allow filtration of ambient light and moisture but minimize noise intrusion. Artificial lighting inside tunnels or culverts will not be used; these devices have not been shown to be effective and may deter nocturnal wildlife. Such devices may also be vandalized.
- **Fencing design.** Fencing will be required in areas where high mortality rates of species attempting to cross the road occur. Fencing will be used along the perimeter of the roadway to direct animals to undercrossings and minimize their access to the road. Fencing designs will be tailored to the species expected to use the undercrossing and will be based on the best available data on species use and best fencing designs available at the time. For example, fencing for amphibians will be high enough to prevent amphibian crossing but low enough to allow movement of other species (e.g., deer, badgers, etc.). Fencing will extend out from the undercrossing along the road to an appropriate distance that will serve as a barrier to wildlife attempting to cross the road. The distance that fencing extends from the undercrossing will be determined on a case-by-case basis and will consider locations of known collisions in the area. Right-of-way fencing could be designed to serve this purpose. Fencing must be attached to the undercrossing to prevent wildlife from passing through a gap between the undercrossing and the beginning of the fence.

  Fencing must be monitored regularly by the facility owner and repairs made promptly to ensure effectiveness. Vegetation must be managed along small mammal and amphibian fencing to reduce the opportunity for these species to climb the fence. Fencing designed for small mammal or amphibian exclusion must be installed at least 8 inches into the soil to prevent small mammals from tunneling under the fence.

Where low-traffic side roads (e.g., ranch roads) cross the wildlife fences along the main roadway, gates will be used whenever possible to avoid creating a gap in the fence that wildlife could move through. The gate will be designed to minimize the gap between the gate and the roadbed. If gates are not feasible, an in-roadway barrier (e.g., wildlife grates) or device that channels species away must be installed to deter wildlife from moving around fences and into the road.

- **Passage placement.** New passages will only be placed or located in areas that connect two viable habitats so that wildlife is not directed into urbanized areas.
- **Road or rail barrier designs.** When compatible with vehicle and train safety, road and rail median barriers or shoulder barriers will allow wildlife to cross under or over the barrier in the event they become trapped in the right-of-way. For example, one-way gates could be used to allow movement out of the hazardous zone but not into it.

Construction Practices

The following construction practices apply to categories of transportation projects listed in **Table 6-3**.

Avoidance and Minimization Measures for Transportation Projects

- Minimize ground disturbance to the smallest area feasible.
- For construction of new dirt roads, prevent rills (a narrow groove or crack in the road resulting from erosion by overland flow) by breaking large or long bare areas up into smaller patches that can be effectively drained before rills can develop (Fishery Network of Central California Coastal Counties 2004).
- For construction of new dirt roads, disconnect and disperse runoff flow paths, including roadside ditches, which might otherwise deliver fine sediment to stream channels (Fishery Network of Central California Coastal Counties 2004).
- For construction of new dirt roads, prevent gullies by dispersing runoff from road surfaces, ditches and construction sites, by correctly designing, installing and maintaining drainage structures (e.g., road shape, rolling dips, out-sloped roads, culverts, etc.) and by keeping streams in their natural channels. No single point of discharge from a road or other disturbed area should carry sufficient flow to create gullies. If gullies continue to develop, additional drainage structures are needed to further disperse the runoff (Fishery Network of Central California Coastal Counties 2004).
- When constructing or reconstructing a ditch, utilize designs for outlet locations that avoid directly dumping ditch water into surface waters, when practical. If not practical, implement sediment management avoidance and minimization measures to trap sediment before it reaches a stream. Avoidance and minimization measures described in Condition 3 and

Condition 4 will be applied as appropriate (Fishery Network of Central California Coastal Counties 2004).

- When designing or redesigning roads, look for opportunities to restore natural drainage patterns. Install culverts or rolling dips to retain water in its drainage of origin, which will decrease the potential for erosion downstream. On problem roads, look for opportunities to reconstruct the road segment to improve and maintain natural drainage patterns; for example, add rolling dips, emergency water bars and additional cross drains (Fishery Network of Central California Coastal Counties 2004).
- When constructing dirt roads, install road surface and ditch drainage structures frequently enough so that gullies do not form at drainage points and so that the road and drainage system are generally dry (Fishery Network of Central California Coastal Counties 2004).
- Equipment storage, fueling, and staging areas will be sited on disturbed areas or on non-sensitive nonnative grassland land cover types, when these sites are available, to minimize risk of direct discharge into riparian areas or other sensitive land cover types. When such sites are not available, staging will occur on the road used to access the site.
- All species survey requirements of this Plan will be followed within the construction zone (i.e., the limit of project construction plus equipment staging areas and access roads) and the entire road right-of-way. Expanding the survey area beyond the project footprint will help identify covered species and their habitats so that impacts on covered species that occur adjacent to the construction zone can be minimized.
- No erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks.
- Silt fencing or other sediment trapping methods will be installed below the grade of new road construction or road widening activities to minimize the transport of sediment off site.
- Temporary barriers will be constructed to keep wildlife out of construction sites, as appropriate.
- Onsite monitoring will be conducted by a qualified biologist throughout the construction period to ensure that disturbance limits, avoidance and minimization measures, and Plan restrictions are being implemented properly.
- Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- Active construction areas will be watered regularly to minimize the impact of dust on adjacent vegetation and wildlife habitats, if warranted.
- Portions of the project that occur in streams (e.g., bridge or culvert construction) will comply with Condition 4.

Post-construction Practices

Following construction, the areas beyond road shoulders and inside the right-of-way will be returned to a pre-project or ecologically improved condition. These actions will likely be applied differently to each road project and will decrease the potential for the spread of nonnative species.

- Invasive plants within the project area and any construction staging areas will be removed to prevent the spread of these species into nearby or adjacent reserves.
- All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.
- Vegetation and debris will be managed in and near culverts and under and near bridges to ensure that entryways remain open and visible to wildlife and that the passage through the culvert or under the bridge remains clear.

All structures constructed for wildlife movement (tunnels, culverts, underpasses, fences) will be monitored at regular intervals by the Local Partner facility owner and repairs made promptly to ensure that the structure is in proper condition. For facilities owned by entities not participating in the Habitat Plan (e.g., California Department of Transportation [Caltrans]), the Implementing Entity will secure access and data collection agreements with these entities to allow the Implementing Entity to conduct this monitoring.

Condition 7. Rural Development Design and Construction Requirements

For this Plan, rural development is defined as any new development that occurs outside of the urban service area at the time the development is permitted under the Plan, or those areas within the urban service area that are only covered for development consistent with rural land uses. The rural development covered activities listed below are subject to this condition and to the applicable permitting process of the local jurisdiction.

- Residential development (e.g., single family homes, subdivisions) consistent with the County General Plan (County of Santa Clara 1994). Ancillary improvements may include privately owned bridges, driveways, access roads, vineyards or orchards, and other accessory structures associated with rural dwelling units.
- Non-residential development consistent with the County General Plan (County of Santa Clara 1994). This includes new commercial facilities

(institutional, industrial) agricultural facilities (mushroom farms, commercial stables, and equestrian event facilities) or similar uses that obtain building, grading and/or other development permits, consistent with local general plans, such.

- Vineyard, orchard, or other farming activity that obtains a building, grading, or development permit from the County or City.
- Residential or non-residential development on the non-urban hillsides of eastern San José (outside the planning limit of urban growth) and in the Coyote Valley Urban Reserve and South Almaden Valley Urban Reserve consistent with the San José General Plan.
- Residential or non-residential development in the Morgan Hill Southeast Quadrant consistent with the Morgan Hill General Plan.
- Residential or non-residential development in the Hecker Pass Specific Plan area consistent with the Gilroy General Plan.
- Projects, including capital projects, implemented by Permittees outside the urban service area.

As described in Chapter 4, rural development in hillside and natural areas that will remain rural has a greater potential for direct and indirect impacts on sensitive habitat and more covered species than urban development in already developed areas for a number of reasons. First, rural development tends to occur on larger parcels or in less constrained sites, affecting larger areas. Second, the existing landscape in hillside and natural areas is generally less disturbed prior to project construction on rural development sites than on urban sites. Third, rural development tends to occur near or in areas with native vegetation and higher biological values, including areas near or adjacent to the Reserve System. Rural development in natural areas tends to increase habitat fragmentation, which degrades or disrupts landscape connectivity. New driveways and roads associated with rural development may create new hazards or barriers to species dispersal. Indirect impacts also occur at both the development site and the landscape level, as rural development can introduce new sources of noise, light and glare, air pollution, and vehicle traffic in more remote areas. Despite the potential for these adverse effects on natural communities and covered species, rural development projects often have greater flexibility to modify designs to reduce or minimize impacts on covered species and natural communities than projects in urban areas.

As described in Chapter 4, existing land use restrictions and requirements also substantially limit the footprint and extent of rural development. For example, almost all of the areas intended to be incorporated into the Reserve System (see Chapter 5) are large land holdings designated as Hillside or Ranchland land uses under the County General Plan. In these areas, the maximum development density allowed is one residence per 20 to 160 acres, based on the average slope of a parcel. Subdivision of sites designated Hillside or Ranchland seldom occurs and this pattern is not expected to change during the permit term due to the physical challenges of development in most of the study area. Under County policies, most subdivision proposals for Hillside parcels are required to cluster

future development and preserve a minimum of 90% of the site as open space. If suitable, these large set-asides could be incorporated into the Reserve System. County policies and regulations also require that grading be minimized in Hillside and Ranchland areas through the site design process, which emphasizes compact development. These land-use restrictions help to minimize the effects of rural development on covered species and natural communities.

The primary goal of this condition is to minimize the potential direct and indirect impacts of rural development in areas that will remain primarily rural on covered species and natural communities most likely to be affected by rural development (see Chapter 4, including **Table 4-1**, for an accounting of which species could be affected by rural development). Additional goals of this condition are listed below.

- Minimize habitat fragmentation and degradation of landscape linkages (e.g., wildlife corridors), including maintaining connectivity between aquatic, riparian, and upland habitats.
- Minimize loss of sensitive land cover types and natural communities including but not limited to riparian woodlands, seasonal wetlands, freshwater marsh, ponds, serpentine grassland, valley oak woodland, knobcone pine woodland, and ponderosa pine woodland.
- Reduce the extent of new roads in remote rural areas in order to reduce negative impacts on species.
- Minimize degradation of streams and maintain the hydrograph to the baseline (defined as the existing conditions at the time of Plan approval), or adjust the hydrograph toward predevelopment conditions[11].
- Minimize construction-related impacts, including noise; air emissions; erosion and sedimentation; disturbance of native vegetation; and introduction of nonnative, invasive species.
- When designing or retrofitting County facilities, evaluate whether the project can be designed to reduce impervious surfaces to less than pre-project conditions.

This condition integrates existing County requirements with additional avoidance and minimization measures that are intended to reinforce current regulations and support the goals of this condition. The design requirements and conditions for all rural development covered by the Plan are listed below and will be applied as applicable.

Design and Construction Requirements

Projects subject to this condition are required to follow the following measures.

[11] The hydrograph will be monitored using existing stream gages within the study area, new gages proposed under the plan, and could be monitored at large developments occurring during the Permit Term, as deemed appropriate by the Implementing Entity.

- Plans presented to local jurisdiction planning staff by private applicants for discretionary approval or a building permit process must identify the proposed impact area and general location of site design features (e.g., residence, access road, leach field, wells, vineyards, accessory structures, etc.). The site plan will show all improvements that will result in permanent land cover impacts (e.g., home, driveway, barn, pool, patio, landscaping, and utilities, etc.), including a 50-foot buffer around all proposed site improvements. The project area plus the 50-foot buffer is called the *development area*. This site plan will also show all site improvements that will result in temporary land cover impacts during construction but that will be returned to the pre-project land cover type within 1 year of completing construction (e.g., leach fields, well pipelines that do not result in permanent habitat disturbance), including a 10-foot buffer around the proposed footprint of the site improvements. Plans do not need to show buffer areas (50 feet for permanent improvements and 10 feet for temporary improvements) that cross property boundaries (e.g., a house 30 feet from a property line only needs to show the buffer area up to the property line). **Figure 6-1** provides an example map of the information required on the site plan. (**Figure 6-1** also defines the development area for the purposes of determining survey areas [see Section 6.8.5 *Item 5: Results of Applicable Species Surveys and Monitoring*] and calculating development fees [see Chapter 9, Section 9.4.1 *Habitat Plan Fees*]).
- Minimize ground disturbance to the smallest area feasible.
- Build close to, and utilize to the extent practicable, existing infrastructure (e.g., existing driveways, utility lines).
- Use existing roads for access and disturbed areas for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- Adhere to Condition 10, *Fuel Buffer*.

Site Hydrology

- Develop only the minimum number of stream crossings necessary to access the property.
- At project sites that are adjacent to any drainage, natural or manmade, exposed soils must be stabilized or otherwise contained on site to prevent excessive sediment from entering a waterway.
- Use of impermeable surfaces surrounding structures must be minimized to the greatest extent possible through the use of alternative design treatments, such as low impact development methods, including but not limited to, permeable pavers, green roofs, and rainwater catchments so that natural infiltration is facilitated and runoff is reduced.
- Consistent with State and Regional Water Quality Control Board regulations, runoff from impermeable surfaces must be directed to natural or landscaped areas, or to designed swales or detention/retention basins to encourage

natural filtration and infiltration. Diversion to a cistern or other onsite stormwater management technique is also allowed and encouraged.

- Avoid and minimize impacts associated with altering natural drainages and contours on the project site. If the site is graded, blend grading into the existing landform as much as possible.
- Leach fields must be sited away from creeks in accordance with the County septic ordinances, as well as at least 100 feet from the reserve boundary. Leach field installation may result in localized soil moisture content and groundwater levels that may have adverse effects on sensitive plants or plant communities in the Reserve System. Leach fields may be sited within the 100-foot setback if site-specific conditions (i.e., topography) adequately minimize effects, or adequate space is not available to site the field elsewhere (i.e., the parcel is too small).
- Adhere to Condition 3, *Maintain Hydrologic Conditions and Protect Water Quality.*
- Adhere to Condition 4, *Stream Avoidance and Minimization for In-Stream Projects*.
- Adhere to Condition 5, *Avoidance and Minimization Measures for In-Stream Operations and Maintenance*.
- Adhere to Condition 11, *Stream and Riparian Setbacks*.

Vineyards

The following conditions apply to new vineyards that are covered by the Habitat Plan (i.e., those requiring a permit from the County or other local jurisdiction) and are encouraged for new and existing vineyards that do not require a development permit.

- During construction, use cover crops, straw mulch, straw wattles/fiber rolls, coconut husks, or other equivalent erosion control mechanism to prevent sediment from being blown or washed from the project site.
- All disturbed areas will be protected during the rainy season (October 15–April 15). Permanent or temporary measures to prevent erosion must be utilized during vineyard planting. Permanent measures must be utilized once planting is completed. Erosion control measures must be in place by October 15.
- Plant vine rows along existing contours to slow runoff and reduce erosion on hillsides (California Sustainable Wine Growing Alliance 2002a).
- A stormwater management system designed for an average storm recurrence interval of not less than 25 years will be installed on the vineyard site. The system will allow excess stormwater runoff to be carried through the vineyard site with minimum erosion and consistent with the overall drainage patterns present in the area. This requirement may be met by either temporary or permanent measures while vineyard planting work is being

carried out, but shall be met by permanent measures by the time vineyard planting work is completed.

- A sediment control system designed to minimize the discharge of sediment from the vineyard site will be installed on the vineyard site. This requirement may be met by either temporary or permanent measures while vineyard planting work is being carried out, but will be met by permanent measures by the time vineyard planting work is completed.
- If open conduits are used as part of the stormwater management system, plant conduits with grasses and other vegetation to filter sediment, pesticides, and fertilizers from runoff and to reduce the potential that the stormwater conduit itself will erode.
- As part of the stormwater and sediment management systems, install vegetated swales, detention basins, extended vegetated buffer, or other similar feature on the downslope edge of the planted area to capture and treat runoff before it enters local streams. This will minimize the amount of sediment, fertilizers, and pesticides that enter local streams.
- Heavy equipment will not be utilized on dirt access roads immediately after rain to prevent roads from turning to mud and sediment from running off the roads (California Sustainable Wine Growing Alliance 2002a).
- Use of natural pest management approaches in place of pesticides is highly encouraged.
- Maintain a buffer of natural vegetation, including grasses, shrubs, or mature trees, around the perimeter of the vineyard to reduce topsoil erosion and provide habitat for birds that will prey on rodents (California Sustainable Wine Growing Alliance 2006).

Private Rural Roads

- Minimize to the maximum extent possible the amount of ground disturbance when constructing roads.
- Ground-disturbing activities associated with road construction should be timed to occur during dry weather months to reduce the possibility of landslides or other sediment being transported to local streams during wet weather.
- If construction extends into wet weather, the road bed will be surfaced with appropriate surfacing material to prevent erosion of the exposed roadbed (Pacific Watershed Associates 1994).
- Avoid, to the extent possible, constructing roads on steep slopes (over 25%) or on unstable slopes.
- If construction on steep slopes is required, construction will be timed for dry weather months to reduce the potential for landslides.
- Adhere to the avoidance and minimization measures for dirt road construction in Condition 6 under *Avoidance and Minimization Measures for Transportation Projects* (see first three bullets under heading).

Other Requirements

- Maintain as much natural vegetation as possible, consistent with fuel management standards, on the project site.
- Maintain County-mandated fuel buffer (variable width by slope conditions).
- On sites adjacent to reserves, locate the proposed development as far from the reserve boundary as possible consistent with other onsite conditions and constraints and adhere to Condition 2, *Incorporate Urban-Wildland Interface Design Elements*.
- All temporarily disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.
- All temporarily disturbed areas, such as staging areas, will be returned to pre-project or ecologically improved conditions within 1 year of completing construction or the impact will be considered permanent.
- No plants identified by the California Invasive Plant Council as invasive[12] will be planted on the project site. Planting with watershed local native and/or drought-resistant plants is highly encouraged. This reduces the need for watering as well as the need for fertilizers and pesticides.
- Outdoor lighting will be of low intensity and will utilize full cutoff fixtures to reduce light pollution of the surrounding natural areas.

Project proponents must continue to adhere to all applicable local planning ordinances including: noise ordinances, zoning ordinances, fuel management guidelines for fire buffers, NPDES permit requirements, Water Collaborative guidelines and standards, Santa Clara County grading ordinance, and drainage manual.

6.4.5 Rural Operations and Maintenance

Rural operations and maintenance activities—such as operations and maintenance of utility lines and facilities, road maintenance, vegetation management, and mitigation monitoring—have the potential to affect covered species by disturbing nesting covered bird species, leading to sediment discharge, and spreading of nonnative invasive species. Condition 8 would reduce the severity of such impacts.

[12] See <www.cal-ipc.org/ip/inventory> for the latest list of invasive species.

Condition 8. Implement Avoidance and Minimization Measures for Rural Road Maintenance

Road maintenance activities have the potential to directly affect covered species through management activities such as mowing, and may indirectly affect covered species by introducing sediment and other pollutants into downstream waterways and by spreading invasive weeds. Effects on covered species may be greatest on unpaved roads due to their erosion potential. The County maintains an extensive network of paved and unpaved roads. All roads maintained by the County Roads and Airports Department in the study area are paved, except for a portion of one road[13]. County Parks maintains an extensive network of unpaved maintenance and emergency access roads within their parks that often serve primarily as recreational trails. SCVWD maintains a small network of paved and unpaved roads, mostly on levees and along pipelines. Gilroy and Morgan Hill do not maintain any dirt roads outside of the planning limit of urban growth.

To avoid and minimize these impacts, avoidance and minimization measures were developed to address potential impacts associated with road operation and maintenance activities. The avoidance and minimization measures in this condition are based largely on the guidelines in *County Road Maintenance Guidelines for Protecting Aquatic Habitat and Salmon Fisheries* (Fishery Network of Central California Coastal Counties 2004). This manual, also called FishNet 4C, was developed by six central California counties (Mendocino, Sonoma, Marin, San Mateo, Santa Cruz and Monterey counties) and included input from cities, local Resource Conservation Districts, and water agencies. This manual identifies best management practices to protect water quality and aquatic habitat when implementing routine and emergency road maintenance activities. These guidelines incorporate avoidance and minimization measures from other road maintenance programs (e.g., the Oregon State Department of Transportation's *Road Maintenance Manual*, and the Northern Five Counties Salmon Conservation Group's *A Water Quality and Stream Habitat Protection Manual for County Road Maintenance in Northwestern California Watersheds*) (Fishery Network of Central California Coastal Counties 2004). Avoidance and minimization measures identified in the FishNet 4C guidelines are included in **Table 6-4** as part of this condition. In addition to the avoidance and minimization measures in **Table 6-4**, project proponents will comply with the avoidance and minimization measures listed below. Avoidance and minimization measures identified in this condition will be used for all covered road operation and maintenance activities.

- Projects occurring in streams or riparian setback zone will also comply with Condition 4 and Condition 5 as appropriate.
- Minimize ground disturbance to the smallest area feasible.
- Within the riparian setback zone (see Condition 11), silt fencing or other sediment control device will be installed downslope from maintenance

[13] The one unpaved road maintained by County Roads and Airports in the study area is 1.75 miles of Mount Madonna Road between Redwood Retreat Road and Summit Road (the county line).

activities that disturb soil (e.g., blading of fire or access roads within Parks or the Reserve System) to minimize the transport of sediment off site.

- In the course of rural road maintenance, no erodible materials will be deposited into watercourses. Brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks where it could be washed into the channel.
- Alternatives such as mechanical control will be considered to substantially lessen any significant impact on the environment before using pesticides. Integrated pest management avoidance and minimization measures will be used for all vegetation control. Limitations may occur due to fire management requirements and local integrated pest management ordinances.
- The effects of herbicide and pesticide application will not be covered under the federal permits for this Plan. Herbicides and pesticides will be used only when necessary and will be applied in strict compliance with label requirements and state, federal, and local regulations. Herbicides and pesticides will only be applied when weather conditions will minimize drift and impacts on non-target sites.
- Maintenance activities on rural roads adjacent to natural land cover types will be seasonally timed, when safety permits and regulatory restrictions allow, to avoid or minimize adverse effects on active nests of resident and migratory birds, including covered bird species (western burrowing owl, least Bell's vireo, and tricolored blackbird). This measure is particularly relevant for right-of-way mowing[14], brush clearing, prevention of disease spread (i.e., sudden oak disease), and tree trimming. Project proponents will coordinate with the Implementing Entity to develop work schedules that optimize logistic, safety, and financial needs while minimizing potential impacts on nesting birds.
- Mowing equipment will be thoroughly cleaned before use in rural areas so they are free of noxious weeds (e.g., yellow star-thistle) and do not introduce such weeds to new areas.
- Maintenance or repair of road medians or shoulder barriers in areas that support natural land cover types (e.g., annual grassland, oak savanna, oak woodland) will not reduce the ability of wildlife of all types to move through or over them, within safety limits. Replacement or repair of road medians will be designed or installed to allow wildlife to move past these structures. Exceptions may be made by the Permittee if significant safety concerns or financial constraints arise.
- All disturbed soils will be revegetated with native plants and/or grasses or sterile nonnative species suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-

[14] For example, County Parks has a Memorandum of Understanding with the California Department of Forestry and Fire Protection (Cal-Fire) that limits mowing to November to April to minimize fire hazards. There may be other public safety restrictions that limit the ability to achieve this guideline.

term erosion control and slow colonization by invasive nonnatives. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding.

- Ground-disturbing road maintenance activities, such as regrading, will be timed so that the moisture content of the soil will support recompaction of the soil and reduce the need for an imported water source to achieve soil compaction. Similarly, activities will be timed so that use of heavy equipment will not result in the creation of mud puddles and ruts.
- Regularly scheduled visual inspections of all roads will be conducted to identify sites where erosion is contributing sediment to local streams. Appropriate actions will be taken within the road right-of-way to manage the erosion.
- Flow lines (e.g., culverts and ditches) will be cleared annually to maintain flow lines free of debris.
- Use existing roads for access and disturbed area for staging as site constraints allow. Off-road travel will avoid sensitive communities such as wetlands and known occurrences of covered plants.
- All new public roads that are accessible to general public vehicular use will be paved (this does not include fire roads that may also serve recreational needs).

6.4.6 Reserve System Implementation

Reserve System implementation—which includes activities associated with recreation, construction, infrastructure design, and maintenance of the reserves—could result in localized effects on covered species and their habitats. All relevant conditions will be applied to construction and maintenance activities within the Reserve System.

Condition 9. Prepare and Implement a Recreation Plan

Public access, consistent with the Habitat Plan conservation strategy, will be provided on all reserves owned in fee title by a public agency. Public access to privately owned land under conservation easement will only be permitted with the landowner's consent. See Chapter 10 *Assurances* for more details.

All public access to reserves will be managed according to a recreation plan that will be developed by the landowner (e.g., County Parks, Open Space Authority) and/or the Implementing Entity consistent with the requirements of this condition. Recreation plans will be reviewed by the Implementing Entity for consistency with this condition and integrated into the applicable reserve unit management plan which will be reviewed and approved by the Permittees and the Wildlife Agencies. Wildlife Agency approval of reserve unit management plans

will follow the timelines established in Chapter 5, Section 5.2.5 *Land Management* subheading *Land Management on Reserves*.

The recreation plan will address lands that are acquired for or incorporated into a reserve unit where the Implementing Entity and the land owner determine that recreational and educational uses are compatible with the conservation strategy of this Plan. Each recreation plan will apply to the portion of the reserve unit for which the recreation plan was developed, including existing open space that is incorporated into the unit (existing open space selected for the Reserve System was chosen, in part, for its recreational uses that are compatible with the biological goals and objectives of the Plan).

At a minimum, each recreation plan will contain the requirements listed below.

- Identification of sites within reserves where recreational use is compatible with the goals and objectives of the Plan.
- Identification of acceptable forms of recreation if different from those forms identified in this condition.
- Identification of sites within reserves that contain sensitive land cover types or suitable or occupied habitat for covered species.
- Maps of existing and proposed recreational trails, staging areas, and facilities and of habitat types affected.
- Site-specific methods of recreational use controls.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities. This includes control of active off-trail recreational activities determined inappropriate by Implementing Entity and Wildlife Agencies.
- A framework for enforcement of recreational restrictions and permitting process for restricted recreational uses.
- An evaluation determining if the impact of planned recreational use is within the limits established in the Plan and EIS/EIR, and if planned recreation is compatible with the biological goals and objectives of the Plan.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of covered or sensitive species).

Land acquired for reserves will be closed to all recreational uses until a recreation plan is developed and approved as part of a reserve unit management plan. Existing recreational uses on land incorporated into the Reserve System from existing open space (e.g., County Parks) will continue until the reserve unit management plan and associated recreation plan is completed. Existing open space selected for the Reserve System was chosen, in part, because of its compatible recreation uses with the conservation strategy (see **Table 5-5** and **Figure 5-4**). Until the reserve unit management plan is completed, no additional

recreational uses beyond what is currently allowed will occur on that existing open space incorporated into the Reserve System.

Recreational uses in the Reserve System will be designed to minimize impacts on biological resources and must adhere to the requirements and guidelines listed below.

- Recreation will only be allowed where it is compatible with the biological goals and objectives of the Plan and has less-than-significant impacts on biological resources after implementation of necessary mitigation measures, as described in the EIR/EIS.
- Recreational use and impacts will be monitored by the landowner and the Implementing Entity to ensure that uses do not substantially and adversely affect covered species. If any use is found to be substantially adversely affecting covered species, that use will be discontinued until adjustments in the use can be made to reduce or eliminate impacts (see Chapter 7 for details on monitoring). The Implementing Entity will make decisions about discontinuing or modifying recreational uses in close consultation with the landowner or other applicable reserve management agency or organization, and through a public process.
- Recreational uses allowed in reserves include pedestrian use (walking, hiking, running), dogs on leash, backpacking, nonmotorized bicycle riding on designated trails, horseback riding, wildlife observation and photography, and environmental education and interpretation on designated trails at appropriate sites. Other uses may be allowed by the Implementing Entity as long as they are compatible with the biological goals and objectives of the Plan and users obtain appropriate permissions for conducting activities if needed (e.g., County Parks requires a permit for professional photography).
- Allowable recreational uses will be controlled and restricted by area and time to minimize impacts on natural communities and covered species and to ensure that the biological goals and objectives of the Plan are met. For example, trails will be closed during and immediately following heavy rains and annually winterized to minimize erosion and sedimentation. Additional types of recreational uses (e.g., horse carts on trails) may be allowed if the Implementing Entity determines that they are consistent with the biological goals and objectives of the Plan, CDFG and USFWS concur, and users obtain appropriate permissions for conducting activities if needed (e.g., County Parks requires a permit for use of horse carts).
- Activities will be allowed in keeping with the ecological needs of the given habitat. Any off trail activities and other active recreation not listed above (e.g., outdoor sports, geocaching) unless otherwise authorized by the Implementing Entity are prohibited. Recreational uses will be allowed only during daylight hours and designated times of the year (i.e., limited seasonal closures to protect sensitive covered species; see below for specific examples) unless authorized through a use permit (i.e., backpacking). Exceptions may be made for educational groups and events that are guided by an Implementing Entity staff person or docent approved by the Implementing Entity.

- New staging areas will be developed to the extent possible in areas within reserves that are already disturbed and not suitable for habitat restoration, and that do not contribute to the conservation biological objectives for covered species habitats and/or natural communities. Sites at the edges of reserves will be chosen over sites on the interior of reserves.
- No motorized vehicles or boats will be allowed in reserves, except for use by the reserve manager staff or with the prior approval of the reserve manager (e.g., contractors implementing Plan conservation actions such as habitat restoration and monitoring, grazing tenants, fire-suppression personnel, and maintenance contractors). For reserves under conservation easements, vehicle use will be allowed as part of the regular use of the land (e.g., agricultural operations, permanent residents, utilities, police and fire departments, other easement holders), as specified in the easement.
- When compatible with Plan biological goals and objectives, dogs may be allowed in daylight hours in designated reserves or in designated areas of reserves, but only on leash. Leash law restrictions will be strictly enforced by reserve managers and staff because of the potential impact of dogs on covered species such as San Joaquin kit fox, western burrowing owl, California red-legged frog, and California tiger salamander. Leash enforcement may include citations and fines. Dogs used for herding purposes by grazing lessees must be under verbal control and have proof of vaccination.
- Recreational hunting or fishing within reserves will be prohibited except in limited circumstances. Landowners who have hunted large game (e.g., deer, elk, turkey, or pigs) on their property that becomes part of the Reserve System through a conservation easement will be allowed to continue this use as long as it is consistent with the biological goals and objectives of the Plan. Similarly, hunting for management purposes (e.g., feral pigs) is encouraged where it will contribute to achieving the goals and objectives of the Plan. The Implementing Entity will develop management hunting protocols on new reserve lands in coordination with other agencies who utilize hunting for management purposes (e.g., CDFG). Fishing is currently allowed in some County parks that will be added to the Reserve System. To be consistent with this condition, lakes or ponds in which fishing will continue will not be included in the Reserve System.
- Picnic areas shall be operated during daylight hours only. No irrigated turf or landscaping shall be allowed in picnic areas. To the extent feasible, picnic areas will be located on the perimeter of preserve areas and will be sited in already disturbed areas. No private vehicles shall be allowed in picnic areas, unless the picnic area is at a staging area and except for limited special events approved by the Implementing Entity. Maintenance and emergency vehicles shall be permitted access to picnic areas.
- Backpack camps shall be limited to use by no more than 25 people at each site. With the exception of Americans with Disabilities Act (ADA) service animals, dogs shall only be allowed in backpack camps on-leash. In coordination with the reserve manager, the Implementing Entity will monitor

use and maintenance of backpack camps and may implement a reservation and permitting process for use of backpack camps.

- Public collecting of native species will be prohibited within reserves.
- Introduction of domestic or feral animals, including cats, ducks, fish, reptiles, and any exotic non-naturalized species, is prohibited within the reserves to prevent interference with and mortality of native species, except by the reserve manager for management purposes (e.g., livestock for grazing or dogs for livestock control or protection).
- Trails will be established on existing roads or trails wherever possible to minimize the need for new ground-disturbing activities and to reduce new and ongoing maintenance costs. However, this will be balanced with the need to reroute some poorly designed existing ranch roads that are difficult and expensive to maintain. In some cases, rerouting access roads may have net benefits on biological resources.
- New trails will be designed and operated to be compatible with natural resources protection. New trails will be sited to minimize impacts on sensitive species (including covered species) and natural communities as well as disturbance to adjacent landowners and land uses. Wetlands will be avoided except for educational trails, and trails through woodland or riparian habitat will avoid tree removal or substantial pruning to the extent possible. If tree removal is required, unhealthy, exotic tree species, or trees unlikely to reach maturity due to site conditions (e.g., being shaded out by larger trees) will be targeted for removal.
- Trails built across streams or through riparian corridors will be sited and designed with the smallest footprint necessary to cross the in-stream area. Stream crossings will be perpendicular to the channel and be designed to avoid any potential for future erosion. Trails that follow a stream course will be sited outside the riparian corridor to the maximum extent feasible.
- Trails will not be paved, except as required by law, and will be sited and designed so that they do not contribute to erosion and bank failure. To provide trail access for a range of user capabilities and needs (including persons with physical limitations) in a manner consistent with state and federal regulations, the landowner would site and design new, paved trails in areas within reserves that are already disturbed and do not have the potential to affect sensitive habitat. As common practice, these types of whole-access trails would be sited near staging areas.
- Recreational uses will be controlled using a variety of techniques including fences, gates, clearly signed trails, educational kiosks, trail maps and brochures, interpretive programs, and patrol by land management staff.
- Construction of recreational facilities within reserves will be limited to those structures necessary to directly support the authorized recreational use of the reserve. Existing facilities will be used where possible. Facilities that support recreation and that may be compatible with the reserve include parking lots (e.g., small gravel or paved lots), trails (unpaved or paved as required by law), educational and informational kiosks, up to one visitor

center located in a disturbed or non-sensitive area, and restroom facilities located and designed to have minimal impacts on habitat. Playgrounds, irrigated turf, off-highway vehicle trails, and other facilities that are incompatible with the goals and objectives of this Plan will not be constructed.

- Signs and informational kiosks will be installed to inform recreational users of the sensitivity of the resources in the reserve, the need to stay on designated trails, and the danger to biological resources of introducing wildlife or plants into the reserve.
- New trails will be prohibited within 100 feet of wetlands and streams that provide suitable habitat for covered amphibians and aquatic reptiles or tricolored blackbird, unless topography or other landscape characteristics shield these trails from the covered species habitat or a lack of effect of the trail on the species can be otherwise demonstrated.
- New trails will be prohibited within 250 feet of active western burrowing owl nests. If an owl pair nests within 250 feet of an active trail, Implementing Entity staff will consult with the Wildlife Agencies to determine the appropriate action to take. Actions may include prohibiting trail use until young have fledged and are no longer dependant on the nest.
- When compatible with Plan biological goals and objectives, recreation plans for reserves adjacent to existing public lands will try to ensure consistency in recreational uses across open space boundaries to minimize confusion in the public. Reserves adjacent to non-Plan public lands with different recreational uses will provide clear signage to explain these differences to users that cross boundary lines. The Implementing Entity will be responsible for securing and signing reserve boundaries.

Rare exceptions to the guidelines listed above will be considered and approved by the Implementing Entity and the Wildlife Agencies on a case-by-case basis. Exceptions will be approved only if they are consistent with the biological goals and objectives of the Plan. Any exceptions will be clearly identified in the recreation plan.

Condition 10. Fuel Buffer

In accordance with state law[15], all applicable covered activities will remove all brush, flammable vegetation, or combustible growth within at least 30 feet and up to 100 feet of occupied dwellings or structures. The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, slope, and type of vegetation. Fuels will be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. The intensity of fuels management may vary within the 100-foot buffer of the structure, the most intense being within the first 30 feet around the structure.

[15] California Government Code Section 51182 and Public Resources Code 4291.

Consistent with fuels management objectives, steps will be taken to minimize erosion consistent with Condition 7.

Applicable covered activities include construction of new structures in the Diablo Range or Santa Cruz Mountains, or new structures built in grassland, chaparral, oak woodland, or conifer woodland land cover types. This condition also applies to structures built in areas designated by the County as a very high fire hazard severity zone pursuant to Section 51179 of the California Government Code.

If the property line is less than 30 feet from the occupied structure, then the brush and vegetation will be cleared up to the property line in order to maintain compliance with Public Resources Code 4291. Additional brush and vegetation clearing may be required by local or other state laws. To ensure that erosion is minimized, grass and other vegetation within 30 feet of structures will be maintained within this fuel buffer to a height of 18 inches or less. The cost of establishing and maintaining this fuel buffer will be borne by the project proponent. This condition does not apply to single trees or other vegetation that is well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a dwelling or structure.

The vast majority of properties adjacent to the Reserve System are expected to be able to create sufficient defensible space within their property to meet this condition. If an additional buffer is deemed necessary by the responsible fire agency, then the private landowner may seek an encroachment permit from the Implementing Entity to meet fire code. In these limited instances, the Implementing Entity may decide to allow a fuel buffer on the reserve side of a property boundary to provide additional protection against wildland fire. The Implementing Entity or land manager would define the allowable activities in encroachment permit to ensure compliance with HCP goals. If this is applied, the fuel management buffer within the reserve will not be credited to the land acquisition requirements in Chapter 5 because this area will be maintained in a disturbed state.

In areas within the Reserve System where management of fuel loads is necessary, the Implementing Entity will trim, mow, conduct prescribed burns, utilize grazing, or otherwise clear vegetation to minimize fuel loads and fire hazards. Various land uses are allowable within the fuel management buffer as long as they reduce fire hazards. Uses such as trails, fire-resistant landscaping, and livestock grazing are compatible with the fuel buffer. Allowable uses must comply with the urban-Reserve System interface guidelines described above.

Creating and maintaining the fuel management buffer within the Reserve System may have impacts on covered species. For example, plants such as Santa Clara Valley dudleya and smooth lessingia may occur in grasslands within fuel buffers. Any impacts on covered plants from fuel buffer management will be counted by the Implementing Entity as an adverse effect that must be offset by conservation of covered plants in the Reserve System (see Chapter 5). In some cases,

maintenance of the fuel buffer may improve habitat for covered plants by reducing cover of nonnative plants.

6.5 Conditions to Minimize Impacts on Natural Communities

Conditions 11–14, described below, are designed to minimize impacts on natural communities identified as representing important ecosystems in the Plan area.

Condition 11. Stream and Riparian Setbacks

This condition applies to all covered activities that may impact streams. This includes all development inside the urban service area where a stream or the stream setback overlaps any portion of the parcel on which a covered activity is being implemented. Outside the urban service area, this includes all covered activities where a stream or stream setback overlaps any portion of the development area or project footprint. Exemptions and exceptions may apply as described below in this condition.

Background

The management of stream corridors and associated riparian habitat through the implementation of setbacks has become an increasingly important tool for conserving aquatic and semi-aquatic populations and riparian vegetation and improving water quality. There is strong evidence that riparian buffers of sufficient width protect and improve water quality by intercepting non-point source pollutants in surface and shallow subsurface water flow (e.g., Lowrance et al. 1984; Castelle et al. 1994).

Healthy riparian buffers are also widely recognized for their ability to perform a variety of physical and biological functions other than improving water quality. These functions include stabilizing stream channels; controlling erosion by regulating sediment storage, transport, and distribution; providing organic matter (e.g., leaves and large woody debris) that is critical for aquatic organisms; storing nutrients for the surrounding watershed; reducing water temperature through shading; minimizing flood peaks; and serving as key recharge points for renewing groundwater supplies (DeBano and Schmidt 1989; O'Laughlin and Belt 1995). Riparian buffers also provide habitat for a large variety of plant and animal species. Riparian buffers have been proposed, and in some cases proven, to be landscape components that promote wildlife movement, enhance gene flow, increase connectivity of isolated habitat patches, and provide breeding and foraging habitats for animals (Hilty et al. 2006; Rosenberg et al. 1997).

Within the study area, streams provide important breeding, foraging, and movement habitat for California red-legged frog, foothill yellow-legged frog, and western pond turtle. Riparian woodland, which is found next to many of the study area's streams, provides breeding sites for tricolored blackbird and least Bell's vireo. Riparian woodland habitat also protects water quality by filtering inflow, thus reducing pollutant input and sediment load. Finally, stream and riparian areas provide key linkages connecting conservation areas targeted under the Habitat Plan (see **Table 5-9** and **Figure 5-6**).

Because of the importance of streams and associated riparian woodland for the benefit of covered species and as sensitive land cover types addressed by this Plan, this condition was developed to be as protective as feasible within the land-use constraints of the local jurisdictions and financial constraints of the Habitat Plan. The following principles were developed to guide the stream and riparian setback condition for this Plan.

- Stream habitat and functions are very difficult to replace once lost; in some cases they cannot be replaced.
- Stream setbacks will be required for all covered activities occurring near streams and riparian areas to minimize effects on covered species as required under the ESA and NCCPA. Additional protections adjacent to streams may also be required for urban redevelopment projects.
- Each of the cities participating in the Habitat Plan, as well as the County, has either setback regulations (Morgan Hill) or policies (San José, Gilroy, County of Santa Clara) currently in place. However, these regulations and policies are not consistent among the jurisdictions. A condition is needed that will make regulatory guidance consistent for all covered activities across all jurisdictions. All covered activities must adhere to both the applicable existing local regulations and the requirements of the Plan.
- The main goal of the stream setback requirement is to minimize further degradation of stream and riparian communities from implementation of covered activities and to maintain basic biological and physical functions of stream and riparian systems.
- The purpose of the stream setback requirement within the urban service area is to, at a minimum, protect stream and riparian communities that provide habitat for covered species because these habitats are unique and cannot be conserved elsewhere within the study area.

Protection of streams and adjacent riparian vegetation under this condition would conserve habitat for California red-legged frog, foothill yellow-legged frog, western pond turtle, and least Bell's vireo. All of these species use stream and riparian habitats as either primary or secondary habitat, as described in Chapter 3, *Physical and Biological Resources*.

An analysis was performed to determine the overall value of the setback for protecting covered species' habitat. Modeled habitat protected by the setback was quantified and compared to the level of protection provided by the Reserve System alone. In GIS the habitat models for four covered species (California

red-legged frog, foothill yellow-legged frog, western pond turtle, and least Bell's vireo) were overlaid with the expected locations and widths of riparian setbacks outside of the planning limit of urban growth (setback avoidance is not required inside the urban service area and so those areas were not included in this analysis) for all covered activities except rural residential development (exact location of rural residential development is not known at this time and thus could not be included in the analysis). Assuming all of these covered activities occur, an additional 2,855 acres (28%) of modeled breeding (primary) habitat for California red-legged frog and an additional 348 miles (50%) of modeled habitat (primary and secondary) for foothill yellow-legged frog would be avoided. Also, implementation of the stream setback would avoid an additional 837 acres (55%) of modeled habitat for least Bell's vireo. Setback benefits to these species and western pond turtle are summarized in **Table 6-5**. Stream habitat for covered species will likely overlap (i.e., miles and acres referenced in the table and above are not additive).

Definitions

The following terms are defined for this condition. These definitions are also found in the glossary (**Appendix A**).

Riparian habitat or riparian vegetation: Riparian vegetation is associated with river, stream, or lake banks and floodplains. Riparian vegetation is also defined by USFWS (2009) as plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (i.e., rivers, streams, lakes, or other watercourses). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetation than adjacent areas, 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms due to the greater availability of surface and subsurface water.

Stream: A watercourse that flows at least periodically or intermittently through a bed or channel having banks. This may include watercourses having a surface or subsurface flow that supports or has supported riparian vegetation, fish or other aquatic life. In the context of the Habitat Plan, a watercourse must meet SCVWD "*Criteria to Verify or Identify a Watercourse as a Stream*" discussed below under *Framework* (Santa Clara Valley Water Resources Protection Collaborative 2006) to qualify as a stream.

Reach: A section of a stream. Reaches are defined based on a specific need (e.g., monitoring) and do not necessarily reflect a standard set of characteristics.

Perennial stream: A stream with year-round surface flow that is supplied by both rainfall runoff and groundwater, as well as by substantial dry-season inputs (e.g., runoff).

Intermittent stream: A stream that is supplied by both rainfall runoff and groundwater. Intermittent streams tend to be seasonal, with flow during the rainy season and into the late spring or early summer.

Ephemeral stream: A stream that flows only in response to rain events and receives no groundwater input. As defined in the Habitat Plan, ephemeral streams will not include irrigation ditches, underground streams, or drainages and swales that have neither defined bed and bank nor evidence of scour or sediment transport. All other ephemeral drainages that qualify as streams will be considered under the Habitat Plan.

Framework

This condition will apply to all covered activities, including those within the Reserve System. This condition also has exemptions and exceptions as described in subsequent sections below.

The width of the setback is driven by the following criteria:

- stream community,
- slope, and
- location of the covered activity in relation to the urban service area of each local jurisdiction.

Each of these criteria is described below.

Stream Community

Stream communities are grouped into two simplified categories for the purposes of this condition. These categories are based on broad definitions of the biological characteristics of those communities and correspond to the level of habitat quality for covered species and sensitive riparian communities within the study area. Categories for the stream setback requirement are provided below.

- **Category 1**. This stream type has sufficient flow to support covered species and riparian habitat. These streams include perennial streams and some intermittent streams. These streams are typically larger than ephemeral drainages and support movement of covered species along the length of the stream. The ability of these streams to also support healthy riparian habitats bolsters the ecological value of the stream. This category also includes all in-channel ponds downstream of reservoirs. These streams are shown in **Figure 6-2**[16]**.**
- **Category 2**. This stream type may not have sufficient flow to support covered species and riparian habitat. These streams include all ephemeral streams and some intermittent stream reaches. These reaches provide minimum support of water-quality functions and primary breeding habitat for

[16] **Figure 6-2** may be periodically updated by the Implementing Entity in consultation with the Wildlife Agencies as new data becomes available.

covered species. Category 2 streams are not specifically mapped as part of the Habitat Plan. They include both identified streams (named creeks and USGS blueline creeks) that are not classified as Category 1 streams (as shown in **Figure 6-2**) and other unmapped streams that meet the "Criteria to Verify or Identify a Watercourse as a Stream" as defined below.

Categories are applied to reaches of streams as opposed to entire streams. This is because almost all streams begin in the uppermost portions of their watersheds as ephemeral streams and gradually become intermittent or perennial and they move downslope and accumulate flows from the watershed and, sometimes, the groundwater basin. As such, a single stream may contain both Category 1 and Category 2 reaches.

The mapped stream network for the Habitat Plan does not differentiate between perennial, intermittent, and ephemeral drainages. However, SCVWD developed a map of all fish-bearing streams in the study area. While fish are not covered by this Plan, presence of fish is a good indicator of the stream type. For example, ephemeral streams do not generally support fish. As such, the stream categories are identified using fish-bearing or non-fish bearing streams as a proxy for Category 1 and Category 2 streams, respectively. Reaches for which fish data are unknown are assumed not to support fish and are included in Category 2. Category 2 reaches cannot occur downstream of a Category 1 reach.

Criteria to Verify or Identify a Watercourse as a Stream
While all Category 1 streams are mapped by the Plan, not all Category 2 streams are mapped. If a watercourse is not mapped by the Plan, but does meet the following criteria, it will be classified as a Category 2 stream. The following is based on the *Santa Clara Valley Water Resources Protection Collaborative* (2006).

A watercourse which does not appear to fit into one of the two described stream categories may be considered a stream if the director of the planning department of the local jurisdiction determines that the watercourse complies with all of the following three criteria:

1. the watercourse is hydrologically connected to a waterway above and below the site or is connected to a spring, headwaters, lake, and/or bay based on satisfying at least one of the conditions identified in paragraph (A) below; and

2. the watercourse is within a defined channel which includes a bed, bank, and exhibits features that indicate actual or potential sediment movement based on satisfying at least one of the conditions identified in paragraph (B) below; and

3. the watercourse occupies a specific topographic position based on satisfying at least one of the conditions identified in paragraph (C) below.

In determining whether the subject watercourse possesses these three features, the following criteria will be examined by the Local Partner with jurisdiction over the covered activity. If necessary, this determination may require the

technical expertise and recommendations of a qualified biologist, hydrologist, or other qualified professional. In addition, the Local Partner with jurisdiction over the covered activity may require the project proponent to provide additional information as deemed necessary to determine if the watercourse satisfies the three criteria listed below.

This process will not be used to determine if a CDFG Streambed Alteration Agreement will be required pursuant to Section 1600 et seq. of the California Fish and Game Code or to determine if a Corps Section 404 Clean Water Act permit will be required.

A. Hydrologic Connectivity—Criterion #1 above will be considered met if any of the following conditions are present:

1. Stream headwaters, springs, in-channel culverts, underground seepage, or groundwater flow are present and capable of providing hydrologic connectivity to recognized watercourses. Sections of stream placed underground by manmade infrastructure (e.g., culverts) are not considered streams for the purpose of this condition except as noted in paragraph B item 4 below.

2. Streams may become connected across or over manmade improvements such as roads (e.g., a temporary connection during a storm event). Except for stream channel improvements, water flowing across or over such improvements within the public right-of-way is not considered a stream. Sections above and/or below this connectivity are streams if they meet the other required features.

3. Springs are present and are considered part of a stream if located above (uphill from) stream initiation.

B. Channel Form—Criterion #2 above will be considered met if any of the following conditions are present:

1. The watercourse has a stream channel, beginning at the point of bed and bank initiation, which may be natural, altered, or engineered.

2. The stream channel must have enough flow under present-day conditions to maintain channel form and to move sediment. A non-engineered stream channel bed and bank are created and maintained by erosion and sedimentation, thus the presence of a channel with bed and bank is itself evidence of sufficient flow. Flow volume or timing is not criteria for stream determination.

3. The stream channel has evidence of scour, sedimentation, sediment sorting, undercut banks and/or other erosion, deposition, or transport features —all of which support sediment movement.

   Engineered or altered channels exist and are partially or wholly made of earth, concrete, rip rap, or other materials. The hardened nature of these channels bed and banks, and a lack of available sediment along the channel reach, may prevent signs of sediment movement or scour. Such channels need not have explicit evidence of sediment transport.

4. A currently underground stream was filled without appropriate permits from all applicable regulatory agencies (federal, state, and local) or is underground due to a landslide.

C. Topographic Position—Criterion #3 above will be considered met if any of the following conditions are present:

1. The watercourse is either a 'U' or 'V' shaped channel typically located at the low point of a macro-topographic feature.
2. The watercourse consists of bowl, 'U', or 'V' shaped topography with high points draining to valley or ravine as part of a large drainage network leading to large streams, lakes and/or a bay.
3. The watercourse located on flatland consists of shallow bowl or 'U' shaped topography. Generally these streams flow from the hills toward a bay following the slope of the land.

Stream topography can be indicated on a topography map by a 'U' or 'V' shape pointed in the uphill direction.

Slope

Slope is an important determinant of soil stability and therefore erosion and sedimentation rates into streams. Steeper slopes erode faster and are more susceptible to disturbance by the covered activities. To account for these factors, stream setback requirements are greater on steeper slopes. The slope categories developed for the Habitat Plan were based on slope-stability categories in local codes and guidelines. Two slope categories were created. Slope categories are as follows.

- **0%–30% Slopes**. Generally stable slopes. This category does not require additional setbacks beyond those identified above.
- **>30% Slopes**. Increasingly unstable slopes. This category requires increase protection and greater stream setbacks.

If the development area as described in Condition 7 is located within 200 feet of a Category 1 stream, the project proponent will include site topography on the development area map (see Section 6.8.2 *Item 2: Project Description and Map*) in 5-foot intervals in elevation. The project proponent will also calculate the average slope of the development area to determine how this criterion is applied. Slope is defined as the average natural slope of the land within the proposed development area based on an engineered site plan. The average slope is determined by the formula:

$S = (I*L/ A)*100$, where

S is the average slope of the area in percent; *I* is the contour interval in feet; *L* is the combined length of contour lines in feet; and A is the area of the development area. Average site slope will be calculated by a registered civil engineer or licensed land surveyor. **Figure 6-3a** illustrates an example setback based on slope.

Urban Service Area

Different setback distances will be applied depending on whether the covered activity occurs within the urban service area[17] (as adopted and mapped by LAFCO and defined by each city's General Plan at the time of adoption of the Habitat Plan) or outside the urban service area. Within the urban service area of San José, Morgan Hill, and Gilroy, there is typically extensive existing urban development. Due to past land-use policies, this development may have limited or no setbacks from streams. As such, these areas tend to be developed or highly altered from a natural state and the overall habitat value for covered species is less than in the rural areas. The stream setback requirement for covered activities within the urban service area is therefore modest and consistent with existing land uses. This setback also recognizes the limited potential for new development within the urban service area to provide stream protections.

Outside of the urban service area, stream setbacks are greater to maximize protection of existing stream functions and values and to provide additional opportunities for stream and riparian protection and restoration (see Chapter 5). Stream setbacks outside the urban service area take into account the opportunity to establish protective setbacks and to pro-actively prevent degradation seen within the urban service area from past development. The difference between setbacks inside and outside of the urban service area reflects the fact that lands within the urban service area provide a minimum amount of habitat in support of basic ecological functions including connectivity for covered species, while stream and riparian habitat outside of the urban service area will be instrumental in successful implementation of the conservation strategy.

Required Setbacks

Stream setback requirements have been developed on the basis of an extensive literature review of applicable research from both local and national sources (**Table 6-6**) and in consultation with the Wildlife Agencies. Scientific studies to determine minimum setbacks typically recommend relatively modest setbacks (an average of 58 feet) to protect water quality (e.g., sediment and nutrient loading). Recommended setbacks to enhance stream ecology were greater and ranged from 85 to 220 feet with an average of 132 feet. Setbacks intended to provide protection for plants and wildlife were the greatest and ranged from 30 to 1,600 feet, with an average range of 335 to 410 feet (**Table 6-6**).

Working from scientifically rigorous definitions of appropriate setbacks, further refinement of setbacks was coordinated with the Local Partners to determine setback widths that, while consistent with the literature, limited the number of situations in which the setback would create undue hardship upon property owners or be infeasible to implement on a consistent basis (the setback would

[17] The urban service area was used instead of the planning limit of urban growth because the urban service area represents the current boundary of urban development, not the future boundary after implementation of all covered activities. The Local Partners felt strongly that stricter riparian setbacks should be applied outside the urban service area to maximize protection of stream and riparian areas prior to urbanization of these areas.

create a large number of property exemptions). As such, the setbacks identified for this Plan (35 to 250 feet) balance the need to protect ecological functions with surrounding land uses and private property constraints.

A stream setback, measured from top of the stream bank, will be applied to all covered activities as shown in **Table 6-7**. To facilitate implementation of this condition, required setbacks are described below based on project location. **Figures 6-3a through 6-3d** illustrate different applications of the setback.

Inside the Urban Service Area

Inside the urban service area at the time of Plan adoption, the setback for Category 1 streams is 100 feet (**Figure 6-3b**). The setback is increased by 50 feet for parcels with slopes greater than 30% to compensate for increased slope instability and higher anticipated rates of erosion. In addition, if the site supports riparian vegetation the setback is equal to either the riparian edge plus a 35 foot buffer or the setback as defined above, whichever is greater.

The setback for all Category 2 streams is 35 feet regardless of location or slope (see **Figure 6-3c**). In addition, if the site supports riparian vegetation, the setback is extended to include the riparian edge plus a 35-foot buffer. The 35-foot buffer is based on a minimum setback distance of 33 feet suggested for sediment and nutrient reduction (Corley et al. 1999). Ephemeral streams, while constituting the majority of streams affected by this condition, are not commonly mapped due to inherent difficulties in mapping ephemeral tributaries in the study area. Unmapped ephemeral streams will only be subject to the required setback if the criteria for defining a watercourse discussed under *Framework* are met for hydrologic connectivity, channel form, and topographic position (Santa Clara Valley Water Resources Protection Collaborative 2006). The applicable local jurisdiction is responsible for making determinations of whether a watercourse qualifies as a Category 2 stream and for implementing setbacks. Each local jurisdiction may also choose to extend the setback beyond 35 feet in cases where site-specific slope and geological characteristics warrant increased protection.

If the project proponent complies with the stream setback when implementing covered activities (i.e., the project avoids the setback), the area of the setback will be excluded from the development fee calculation for the project. The project will be tracked as the parcel or development area excluding the avoided setback so that local jurisdictions are able to identify new impacts in future project applications.

Outside the Urban Service Area

Outside of the urban service area, setback requirements are greater. For Category 1 streams the setback distance is 150 feet (see **Figure 6-3d**). The setback is increased by 50 feet for slopes greater than 30% to compensate for increased slope instability and higher anticipated rates of erosion (**Figure 6-3a**). In addition, if the site supports riparian vegetation, the setback is either the riparian edge plus a 35-foot buffer or the setback described above, whichever is greater.

As described above for required setbacks "*Inside the Urban Service Area*," the setback for all Category 2 streams is 35 feet regardless of location or slope (**Figure 6-3c**). If the site supports riparian vegetation, the setback will extend from the riparian edge plus a 35-foot buffer.

Unless a covered activity meets the "Exemption" criteria or is granted a stream setback exception, as described below, implementation of covered activities is prohibited within the stream setback.

Project proponents of projects located outside the urban service area must ensure that the development area does not encroach into the stream setback unless an exemption or an exception is applied. Projects or portions of projects that qualify for an exemption or exception are described below.

If a project proponent chooses to offer a conservation easement onstream setback areas, and the Implementing Entity and Wildlife Agencies approve, the contribution of the area placed under conservation easement may offset development fees as described below under *Fees and Conservation Easements*, and the land will become part of the Reserve System and contribute to the Plan's requirements for riparian preservation (**Table 5-13**).

Exemptions

The exemptions below apply regardless of location. If a covered activity qualifies for an exemption, a stream setback is not applied and the project proponent is not required to comply with this condition. However, other conditions may still apply and the project is still required to pay all applicable fees (e.g., land cover fee, wetland fee) as described in Chapter 9. Exemptions from the stream setback include the following.

1. Any activity that is not a covered activity and not subject to the Habitat Plan or its conditions.
2. Activities listed as exempt in Section 6.2.
3. Development on parcels less than 0.5 acre.
4. Covered activities that require work within or adjacent to streams such as bridges, levee maintenance and repair, flood-protection projects, stream maintenance, outfall installation and maintenance, flood-protection capital projects, dam-related capital projects.
5. Recreational trails (see Condition 4 and 9 for details on trail siting).
6. Replacement of utilities that result in no new permanent disturbance to the riparian corridor during construction and operation and generate only temporary loss of habitat. (This exemption does not apply for utility projects that result in new permanent riparian impacts.)
7. Stream crossings essential to provide a means of access to parcel or facility.

Exceptions

Stream setback policies that apply to a large number of parcels with varying characteristics require a clear and practical set of exceptions. The term exception means an allowance for reductions in mandated setback distances necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, portions of this stream setback condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the stream setback. For example, geologic and seismic hazards, unusual lot size or configurations, unusual slope, or grading and access issues may present site constraints that require exceptions to the stream setback condition in order to allow reasonable development of a site consistent with local land use regulations.

For all proposed exceptions to the stream setbacks (inside or outside the urban service area), exceptions will be considered based on the following factors:

1. The existence of legal uses within the setback.
2. The extent to which meeting the required setback would result in a demonstrable hardship (i.e., denies an owner any economically viable use of his land or adversely affects recognized real property interests) for the applicant.
3. The extent to which meeting the required setback would require deviation from, exceptions to, or variances from other established policies, ordinances or standards regarding grading, access, water supply, wastewater treatment, disposal systems, geologic hazards, zoning, or other established code standards.
4. The stream setback exception does not preclude achieving the biological goals and objectives of the Habitat Plan or conflict with other applicable requirements of the Habitat Plan and local policies.

Regardless of project location, stream setback exceptions may not reduce a Category 1 stream setback to less than a distance of 50 feet for new development or 35 feet for existing or previously developed sites with legal buildings and uses (**Figure 6-3b**). All applicable fees must be paid for areas granted an exception.

Exceptions may be requested through the standard application process described in Section 6.8, or through a separate request process. Applicants must apply for a stream-setback exception through their local jurisdiction. All private applications for stream-setback exceptions must be reviewed and approved by the local jurisdiction. For projects implemented by a local jurisdiction, exception requests must be made to the Implementing Entity. The findings required to approve the stream setback exception must be supported by factual information and judgments in the record.

As part of the review process, the local jurisdiction or the Implementing Entity must consider the implications of a reduced setback on the riparian system and

covered species, progress toward the biological goals and objective of the Plan, and potential effects on adjacent properties. The local jurisdiction or the Implementing Entity must make written findings that document these considerations and the rationale for the stream-setback exception (see below for specific required findings). The local jurisdiction or the Implementing Entity may require technical reports from qualified professionals or consultants to support the application or request. For example, for any significant proposed reduction, a report by a qualified biologist, stream hydrologist, registered engineer, or other professional may be required as a basis for making necessary findings. Please see Section 6.8.5 for definition of a "qualified biologist."

If the stream setback exception is granted at an administrative level (Zoning Administrator) or by a designated decision-making authority (Planning Commission), local agencies must include provisions that allow appeal of this decision to the elected legislative body of the applicable agency. Applicable fees may be imposed by the legislative body for processing such appeals, as well as for the original exception requests.

Prior to granting the exception, the local jurisdiction will provide the exception request and proposed decision to both the Implementing Entity and the Wildlife Agencies for review and comment. The Implementing Entity and Wildlife Agencies will have 30 days to review the request and provide a written response. A local agency cannot take an action until after that 30 day-period. The Implementing Entity will compile a list of all exceptions granted each calendar year for inclusion in the annual report to the Wildlife Agencies.

Fees and Conservation Easements

If the stream setback is precluded from future development by a permanent conservation easement offered voluntarily by the landowner, and the easement is acceptable to the Implementing Entity and Wildlife Agencies and consistent with the Plan Reserve System (as described in Chapter 8, Section 8.6.3), a portion of the land cover fee for the covered activity (i.e., the fee for impacts to land cover types outside of the setback) may be waived by the Implementing Entity. If the value of the easement, in terms of area and resource value, exceeds the fee, credit cannot be "banked" for other projects (i.e., the Implementing Entity will not compensate for excess credit). Partial fee waivers for setbacks will be determined on a case-by-case basis by the Implementing Entity according to the criteria in Chapter 9, Section 9.4.1, subheading *Land Provided in Lieu of Development Fee*.

Each local jurisdiction may also consider imposing a conservation easement as a requirement for development approval when there is a direct nexus between the effects or impacts of a project and the need for an easement. The Implementing Entity will provide technical assistance to the local jurisdiction to determine whether a conservation easement is warranted. An easement must also demonstrate rough proportionality with the impact of the project.

Condition 12. Wetland and Pond Avoidance and Minimization

The purpose of this condition is to minimize direct and indirect impacts to wetlands and ponds and in some cases, avoid direct and indirect impacts to high quality wetlands and ponds. Direct impacts are those that directly affect a wetland or a pond within its mapped boundary (see Section 6.8.4 *Item 4: Map of Wetlands and Waters* for a description of mapping direct impacts to wetlands). Project proponents are required to pay a wetland fee for impacts to wetlands and ponds to cover the cost of restoration or creation of aquatic land cover types required by this Plan (see Chapter 9 for details on this wetland fee). Covered activities can avoid paying the wetland fee if they avoid impacts to the wetland.

All project proponents will implement the following actions to avoid and minimize impacts of covered activities on wetlands and ponds.

Planning Actions

- Projects must be designed to avoid and minimize impacts to wetlands to the maximum extent practicable.
- Applicants with streams on site must follow the stream setback requirements in Condition 11.
- Applicants for coverage under the Plan must follow the requirements and guidelines in Condition 3 to minimize the effects of development on downstream hydrology, streams, and wetlands.

Design

- Locate septic facilities, if used, at least 100 feet from the edge of a wetland or pond if space allows.
- If the runoff from the development will flow within 100 feet of a wetland or pond, install vegetated stormwater filtration features, such as rain gardens, grass swales, tree box filters, or infiltration basins, to capture and treat flows.
- Plant native vegetation (shrubs and small trees) between the wetland or pond and the development such that the line of sight between the wetland or pond and the development is shielded.
- If during the environmental review process it is shown that a project has adverse indirect impacts to the wetland's function (change in hydrological functions, etc.), the project will be required to avoid these indirect effects, as determined on a case-by-case approach by the local jurisdiction, in consultation with the Implementing Entity. If a Local Partner is carrying out the activity, it will coordinate avoidance measures with the Implementing Entity. Wetlands that are not completely avoided, including indirect effects, will be considered permanently impacted and will count towards the impact

caps described in **Table 4-2** and will be assessed fees as described in Chapter 9. If however, the local jurisdiction demonstrates to the Wildlife Agencies that the wetlands to be indirectly affected are highly degraded prior to project impacts, and the Wildlife Agencies agree, impacts will not be counted toward the impact caps described in **Table 4-2** and fees will not be assessed. "Highly degraded" wetlands could include, but are not limited to, those that are indirectly affected by surrounding development or agriculture to the extent that hydrology, water quality, or habitat for covered species is adversely affected.

Construction Actions

- Personnel conducting ground-disturbing activities in or adjacent to wetlands and ponds will be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations of project proponents working under this Plan.
- All wetlands and ponds to be avoided by covered activities will be temporarily staked in the field by a qualified biologist to ensure that construction equipment and personnel avoid these features.
- Fencing will be erected along the outer edge of the project area, between the project area and a wetland or pond. The type of fencing will match the activity and impact types. For example, projects that have the potential to cause erosion will require erosion control barriers (see below), and projects that may bring more household pets to a site will be fenced to exclude pets. The temporal requirements for fencing also depend on the activity and impact type. For example, fencing for permanent impacts will be permanent, and fencing for short-term impacts will be removed after the activity is completed.
- Appropriate erosion control measures (e.g., fiber rolls, filter fences, vegetative buffer strips) will be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control blankets will be used as a last resort because of their tendency to biodegrade slowly and trap reptiles and amphibians.
- Erosion-control measures will be placed between the wetland or pond and the outer edge of the project site.
- Fiber rolls used for erosion control will be certified as free of noxious weed seed.
- Seed mixtures applied for erosion control will not contain invasive nonnative species, but will rather be composed of native species appropriate for the site or sterile nonnative species. If sterile nonnative species are used for temporary erosion control, native seed mixtures must be used in subsequent treatments to provide long-term erosion control and slow colonization by invasive nonnatives.

- Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas.
- Trash generated by covered activities will be promptly and properly removed from the site.
- No construction or maintenance vehicles will be refueled within 200 feet of avoided wetlands and ponds unless a bermed and lined refueling area is constructed and hazardous material absorbent pads are available in the event of a spill.
- All management of pest species will be conducted in compliance with the County integrated pest management (IPM) ordinance. In addition, other requirements identified in this chapter that exceed the requirements of the IPM ordinance will be implemented.
- Where appropriate to control serious invasive plants, herbicides that have been approved by EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species (e.g., yellow star-thistle). Herbicide drift will be minimized by applying the herbicide as close to the target area as possible. Herbicides will only be applied by certified personnel in accordance with label instructions.
- All organic matter should be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with ponds, wetlands, or potentially contaminated sediments. Items should be rinsed with clean water before leaving each study site (U.S. Fish and Wildlife Service 2005).
- Implement measures to minimize the spread of disease and non-native species based on current Wildlife Agency protocols (e.g., *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog: Appendix B, Recommended Equipment Decontamination Procedures* [U.S. Fish and Wildlife Service 2005]) and other best available science.
- Used cleaning materials (liquids, etc.) should be disposed of safely, and if necessary, taken off site for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags (U.S. Fish and Wildlife Service 2005).
- Portions of the project that occur in streams will comply with Condition 4.

Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization

Serpentine soils comprise four land cover types in the study area: serpentine bunchgrass grassland, serpentine rock outcrops, serpentine seeps, and serpentine chaparral. These land cover types are estimated to encompass 14,314 acres in the study area. Additional unmapped areas of serpentine may be discovered during

implementation because it often occurs in small patches that could not be discerned at the scale of the mapping and available data.

Most of the serpentine areas in the study area are expected to be acquired as part of the Reserve System (see Chapter 5 for specific targets). However, some impacts on these land cover types may still occur (e.g., allowable impacts to serpentine bunchgrass grassland are limited to 550 acres [**Table 4-2]**). Because of the high importance and rarity of serpentine soils and their habitats, these areas will be avoided whenever feasible during project planning.

In cases where serpentine areas are part of a project site in a developed area, the project will be designed to preserve larger patches of serpentine outside the development area and limit impacts to the smallest patches feasible and to the edges of serpentine patches regardless of their size. The length of the edge of the serpentine patch that is directly adjacent to the developed area will be minimized and will include as large a buffer as possible between the serpentine edge and the developed area. Landscaping will not be planted on serpentine areas except as needed to reduce fire hazards adjacent to structures consistent with County fire hazard reduction regulations (see also Condition 10). Plantings will not include species that are known or suspected to invade serpentine habitats or cross-pollinate with endemic serpentine plant species or other native plants.

On undeveloped sites, the project area and construction staging area must be located to avoid or minimize impacts to any serpentine on site. The guidelines described above for developed areas will also be followed for project sites in undeveloped areas.

Where mapped serpentine cannot be avoided, the minimization measures listed below will be implemented.

- Conduct surveys of the serpentine vegetation to inventory for covered species and evaluate habitat quality for covered species.
- For portions of the development area that are in Bay checkerspot butterfly habitat units identified in Appendix D, survey the site for the presence of larval host plants of Bay checkerspot butterfly. If larval host plants are found, conduct reconnaissance level surveys for adult butterflies during the peak of the flight period to determine species presence or absence.
- Locate the project footprint as far from the covered species or the highest-quality serpentine habitat as is feasible. Utilize applicable buffers as identified in this chapter.
- If covered plants occur on the site and cannot be avoided, notify the Implementing Entity of the construction schedule so that plant salvage can be considered and potentially implemented (see Condition 19).

Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization

Valley oak woodland and blue oak woodland are considered by CDFG to be sensitive biotic communities (California Department of Fish and Game 2003). There is evidence that valley oak woodland was once one of the dominant land cover types on the floor of the Santa Clara Valley, but it has been largely removed by urban and agricultural development (San Francisco Estuary Institute 2006, 2008). These communities can provide important foraging or movement habitat for species covered by the Plan—California red-legged frog, and California tiger salamander—as well as for many other native species. For these reasons, these two oak woodland land cover types would benefit from some avoidance and minimization associated with covered activities.

All covered activities will implement the following actions to avoid or minimize impacts on valley and blue oak woodland.

Project Planning

- Projects on sites supporting substantial stands of valley oak woodland or blue oak woodland will minimize their impacts on these communities and preserve these stands on site when to do so would further the biological goals and objectives of the Plan. For example, projects should preserve oak woodland communities that are adjacent to existing stands of protected oak woodlands to avoid habitat fragmentation and degradation of wildlife linkages.
- Projects will avoid to the maximum extent feasible irrigating in and around valley oak woodland and will avoid altering hydrology of the site, including location of septic leach fields, such that valley oak woodland receives more water than under pre-project conditions.
- Large and healthy trees will be maintained on site whenever feasible. Local jurisdictions may set tree size thresholds for preservation that are consistent with local tree ordinances. Large valley oak trees still healthy today are clearly visible on air photos from as far back as 1939 (San Francisco Estuary Institute 2006), even though they are surrounded by agricultural fields or urban development. Preserved trees can provide habitat value for many decades; they also provide a significant community amenity.
- If trees are maintained on a site, buffer zones will be established between preserved valley oak or blue oak trees and development at a distance equal to or greater than the root protection zone, which is defined as a buffer zone determined by calculating one foot for each inch of trunk diameter measured at 4.5 feet above ground surface (Matheny and Clark 1998).

Project Construction

- Temporary project access points will be constructed as close as possible to the work area to minimize necessity for tree removal.
- Roads and pathways will be aligned outside of the tree's root protection zone (as defined above) whenever possible.
- Roads and pathways designed beneath or within 25 feet of the dripline of oak trees will be graded using hand-held equipment and will use permeable surfacing (e.g., grass pavers that allow runoff to infiltrate the ground).
- Alteration of natural grade through fill or other means within the root protection zone of oak trees will be minimized.
- Trenching for utility lines and other purposes will be minimized within root protection zones. Utilities may be installed in these areas by boring below the root zone.
- If extensive pruning of blue oaks and valley oaks is necessary, pruning will be conducted during the winter dormant period for these species and under the supervision of an arborist certified to International Society of Arboriculture or similar standards.

6.6 Conditions to Minimize Impacts on Specific Covered Species

Species-specific conditions are presented below. The timing of species habitat surveys, preconstruction surveys, and construction monitoring relative to impacts are described below and summarized in **Table 6-8**. For long term projects and projects that are phased[18], the frequency and timing of surveys relative to impacts will be determined by the local jurisdiction or Implementing Entity in coordination with the Wildlife Agencies on a case-by-case basis. At a minimum, surveys and monitoring (if required) will be done prior to each construction phase if the entire project area is not continuously disturbed between phases.

The Implementing Entity will maintain and update modeled habitat maps based on guidance provided in Chapter 7, *Monitoring and Adaptive Management Program.* For species that require surveys based on modeled habitat[19], qualified biologists will utilize the most current modeled habitat maps available from the Implementing Entity to guide where surveys must be conducted. Surveys will be conducted based on modeled habitat maps that are updated throughout Plan implementation. Similarly, the Implementing Entity will track impacts to modeled habitat based on modeled habitat maps updated during Plan implementation.

[18] Phasing may include planned phasing of construction (e.g., multi-year phasing of a road construction project), or unplanned gaps in construction activity.
[19] San Joaquin kit fox, western burrowing owl, and Bay checkerspot butterfly.

6.6.1 Selected Covered Wildlife Species

Conditions 15–18 identify conditions on covered activities that are specific to some of the covered species. Activities that may affect these covered species must also adhere to other applicable conditions in this chapter, including Condition 1, *Avoid Direct Impacts on Legally Protected Plant and Wildlife Species*. A summary of species surveys, preconstruction surveys, and construction monitoring requirements is provided in **Table 6-8**.

Condition 15. Western Burrowing Owl

To avoid or minimize direct impacts of covered activities on western burrowing owls, the procedures described below will be implemented. This condition incorporates survey, avoidance, and minimization guidelines from the following western burrowing owl conservation plans and other sources pertaining to the study area. The avoidance and minimization process for western burrowing owl as required in this condition is illustrated in **Figure 6-4**.

- CDFG *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).
- CDFG *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012).
- *Draft Burrowing Owl Habitat Conservation Strategy and Implementation Plan* (City of San José 2000).
- *City of Morgan Hill—Citywide Burrowing Owl Habitat Mitigation Plan* (City of Morgan Hill 2003).
- Personal communication with Jack Barclay regarding ongoing monitoring efforts in the study area including annual monitoring at San José International Airport.
- Various unpublished reports from survey efforts in the study area.
- Guidance from CDFG.

Western Burrowing Owl Habitat Survey

Western burrowing owl habitat surveys will be required in the study area in all modeled occupied nesting habitat (see **Figure 5-11**). Surveys are not required in sites that are mapped as potential burrowing owl nesting or only overwintering habitat. Modeled habitat types may change throughout the permit term based on the best available scientific data. For example, the Implementing Entity will be conducting annual surveys or collecting annual survey data of other organizations in occupied nesting habitat throughout the permitarea to determine the annual status of known nesting areas the number of adult breeding owls present. The Implementing Entity will also coordinate with other South Bay local

governments, special districts, and non-profit organizations every 3 years to assess status of the burrowing owl population in the entire study area and the expanded study area for burrowing owl conservation, outside areas of modeled occupied habitat.

Habitat surveys in occupied nesting habitat are required in both breeding and non-breeding seasons. If the project site falls within occupied nesting habitat, a qualified biologist will map areas with burrows (i.e., areas of highest likelihood of burrowing owl activity) and all burrows that may be occupied (as indicated by tracks, feathers, egg shell fragments, pellets, prey remains, or excrement) on the project site. This mapping will be conducted while walking transects throughout the entire project footprint, plus all accessible areas within a 250-foot radius from the project footprint. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, while in open areas with little vegetation they can be 50 feet apart.

This methodology is consistent with other accepted survey protocols for this species (California Burrowing Owl Consortium 1993). The Implementing Entity may update this protocol during the permit term based on changes to the accepted protocol with the concurrence of the Wildlife Agencies. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If suitable habitat is identified during the habitat survey, and if the project does not fully avoid impacts to the suitable habitat, preconstruction surveys will be required. Suitable habitat is fully avoided if the project footprint does not impinge on a 250-foot buffer around the suitable burrow.

Preconstruction Survey

Prior to any ground disturbance related to covered activities, a qualified biologist will conduct preconstruction surveys in all suitable habitat areas as identified during habitat surveys. The purpose of the preconstruction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activity.

To maximize the likelihood of detecting owls, the preconstruction survey will last a minimum of three hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total) or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped.

Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the project proponent must begin surveys no more than 4 days prior to

construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last minute changes in schedule or contracting that may occur if burrowing owls are found, the project proponent may also conduct a preliminary survey up to 14 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

Implementation of Covered Activities in Burrowing Owl Habitat

In order to allow covered activities to go forward in burrowing owl habitat prior to the formal take authorization of individuals described above, project applicants will employ avoidance measures described below to ensure that direct take does not occur. Application of these measures is illustrated in **Figure 6-4**. The below avoidance measures apply to all projects that affect any burrowing owl habitat, regardless of whether surveys are required by this condition. In other words, if a project is occurring outside of modeled occupied nesting habitat, the project proponent is obligated to ensure avoidance and minimization of impact to burrowing owls according to the measures described below.

Avoidance Measures

Breeding Season

If evidence of western burrowing owls is found during the breeding season (February 1–August 31), the project proponent will avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young (occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance will include establishment of a 250-foot non-disturbance buffer zone around nests. Construction may occur outside of the 250-foot non-disturbance buffer zone. Construction may occur inside of the 250-foot non-disturbance buffer during the breeding season if:

- the nest is not disturbed, and
- the project proponent develops an avoidance, minimization, and monitoring plan that will be reviewed by the Implementing Entity and the Wildlife Agencies prior to project construction based on the following criteria.
  - The Implementing Entity and the Wildlife Agencies approves of the avoidance and minimization plan provided by the project applicant.
  - A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
  - The same qualified biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

- If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until the adults and juveniles from the occupied burrows have moved out of the project site.
- If monitoring indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use by owls, the non-disturbance buffer zone may be removed. The biologist will excavate the burrow to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and the Wildlife Agencies have 21 calendar days to respond to a request from the project proponent to review the proposed construction monitoring plan. If these parties do not respond within 21 calendar days, it will be presumed that they concur with the proposal and work can commence.

Non-Breeding Season

During the non-breeding season (September 1–January 31), the project proponent will establish a 250-foot non-disturbance buffer around occupied burrows as determined by a qualified biologist. Construction activities outside of this 250-foot buffer are allowed. Construction activities within the non-disturbance buffer are allowed if the following criteria are met in order to prevent owls from abandoning important overwintering sites.

- A qualified biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same qualified biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl nesting and foraging behavior as a result of construction activities, these activities will cease within the 250-foot buffer.
- If the owls are gone for at least one week, the project proponent may request approval from the Implementing Entity that a qualified biologist excavate usable burrows to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

Construction Monitoring

Based on the avoidance, minimization, and monitoring plan developed (as required in the above section), during construction, the non-disturbance buffer zones will be established and maintained if applicable. A qualified biologist will

monitor the site consistent with the requirements described above to ensure that buffers are enforced and owls are not disturbed. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

Passive Relocation

Passive relocation would not be allowed under the Plan until the positive growth trend described in Section 5.4.6 is achieved. Once this occurs, passive owl relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other measures described in this condition do not allow work to continue. Passive relocation would only be proposed if the burrow needed to be removed, or had the potential of collapsing (e.g., from construction activities), as a result of the covered activity.

If passive relocation is eventually allowed, a qualified biologist can passively exclude birds from their burrows during non-breeding season only by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools. During excavation an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having the overburden collapse into the burrow and trapping owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies during Plan implementation.

Exceptions to Passive Relocation Prohibition

Due to the relatively low numbers of burrowing owls in the study area, it is not expected that the prohibition of passive relocation will result in project delays. However, it is possible that a covered activity could not proceed due to avoidance measures for burrowing owl in this condition if owls continually persist on a site where avoidance is not feasible. In such cases, a project proponent may apply for an exception based on the following process. For this condition, the term exception means an allowance to conduct passive relocation of burrowing owls during the non-breeding season only when this activity is not otherwise allowed. This exception process is necessary to allow reasonable use and development of a property based on the variety of constraints and factors that may affect the property. In situations where exceptions are granted, other portions of this condition may still apply. Exceptions will be used in a minority of cases with special circumstances that limit or restrict the ability of a landowner to fully apply the condition.

Exceptions may be requested through the standard application process described in Section 6.8, or through a separate request process. Private applicants must apply for a passive relocation exception through their local jurisdiction. Project

proponents must develop and submit with the request for exception a passive relocation plan. The passive relocation plan must document the following.

1. That owls have occupied the site for a full year without relocating voluntarily. Surveys documenting presence must be completed by a qualified biologist and results must be provided in a written report. The report should confirm that one or more individuals (i.e., unique owl[s]) were monitored for a year and that the owl(s) had used the site for a full year[20].
2. The proposed process for relocation, including schedule for the proposed passive relocation and name of the qualified biologist.

The local jurisdiction, the Implementing Entity, and the Wildlife Agencies will meet to discuss the proposed passive relocation plan. Exceptions will be considered based on, but not limited to, the following factors:

1. The parcel is equal to or less than 3 acres and is more than 1,000 feet from other suitable nesting or foraging habitat such that it is unlikely the site can sustain burrowing owls into the future.
2. If the site has historically been used for nesting (within the last 3 years).
3. If the site is a target for a burrowing owl temporary or permanent management agreement.

As part of the review process, the Implementing Entity and Wildlife Agencies will consider the implications of an exception on the burrowing owl population and progress toward the biological goals and objective of the Plan. A passive relocation exception will not be granted if the Implementing Entity and Wildlife Agencies determine that such an exception, as mitigated, would preclude implementation of the conservation strategy of the Habitat Plan or conflict with other applicable requirements of the Habitat Plan and local policies. The local jurisdiction or the Implementing Entity must make written findings that document these considerations and the rationale for the exception.

Additional mitigation may be required as part of an approval to implement passive relocation that is otherwise prohibited by the Plan. The need for and form of additional mitigation will be determined and approved by the Implementing Entity and Wildlife Agencies. Additional mitigation could include payment of additional fees, or contribution of occupied lands to the Reserve System. Applicable fees may be imposed by the local jurisdiction for processing exception requests. Mitigation will be proportional to the impact occurring as a result of a specific eviction and will fully mitigate such evictions.

The Implementing Entity will compile a list of all exceptions granted each calendar year for inclusion in the annual report to the Wildlife Agencies.

[20] If monitoring reveals that an owl(s) has vacated the site for 10 consecutive days or more, the project applicant may assume that the owl has voluntarily relocated and a qualified biologist may take measures to collapse suitable habitat to discourage new owls from occupying the site.

Condition 16. Least Bell's Vireo

To avoid and minimize direct impacts of covered activities on least Bell's vireos, the following procedures will be implemented. These survey requirements provide compliance with the Plan and the MBTA (least Bell's vireo is a listed species, so the HCP permit also serves as a Special Purpose Permit under MBTA; see Chapter 1 for details).

Habitat Survey

Least Bell's vireo surveys will only be required for projects occurring within potential breeding habitat. The Implementing Entity will provide maps showing the geographic regions where surveys may be required. These maps will be updated during the permit term to incorporate best available science on where this species may be found. At the time of Plan adoption, the area of required surveys is limited to the Pajaro watershed, including Uvas, Llagas, and Pacheco sub-watersheds.

Projects occurring within the mapped area require surveys if the project-specific verified land cover map (see Section 6.8.3 *Item 3: Land Cover Types on Site*) shows that the project area is within 250 feet of riparian land cover types. If a project meets this criterion, a qualified biologist will conduct a field investigation to identify and map early successional riparian vegetation (typically dominated by willow shrubs and other thick understory vegetation) which may be used for nesting. If early successional riparian vegetation is found, the project proponent may revise the proposed project to avoid all areas within a 250-foot buffer around the potential nesting habitat and surveys will be concluded.

Preconstruction Survey

If the project proponent chooses not to avoid the potential nesting site and the 250-foot buffer, additional nesting surveys are required. Prior to any ground disturbance related to covered activities, a qualified biologist will:

1. Make his/her best effort to determine if there has been nesting at the site in the past 3 years. This includes checking the CNDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests).
2. If no nesting in the past 3 years is evident, conduct a preconstruction survey in areas identified in the habitat survey as supporting potential least Bell's vireo nesting habitat. Surveys will be made at the appropriate times of year when nesting use is expected to occur. The surveys will document the presence or absence of nesting pairs of least Bell's vireo. Protocol-level surveys will be used (USFWS's 2001 least Bell's vireo survey guidelines or latest protocol). Surveys will conclude no more than two calendar days prior to construction.

To avoid last minute changes in schedule or contracting that may occur if an active nest is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. If one or more least Bell's vireo nests are found present (through step 1 or 2 above), the nest site(s) plus a 250-foot buffer will be avoided (see below for additional avoidance and minimization details). The Wildlife Agencies will be notified immediately of nest locations.

Avoidance and Minimization

Covered activities must avoid active least Bell's vireo nests during the breeding season (March 15–July 31) by maintaining at least a 250-foot no-activity buffer around all active nests. As long as the nest remains active, no activity will occur within the established buffer. Disturbance to previous nesting sites (for up to 3 years) will also be avoided during the breeding season unless the disturbance is required for the conservation strategy or to maintain public safety. Least Bell's vireos use previous nesting sites, and disturbance during the breeding season may preclude birds from using existing nests.

The required buffer may be reduced in areas where there are sufficient barriers or topographic relief to protect the nest from excessive noise or other disturbance. Implementing Entity technical staff will coordinate with the Wildlife Agencies and evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis.

Construction Monitoring

If occupied nests are identified, a qualified biologist will monitor construction to ensure that the 250-foot no-activity buffer around all active least Bell's vireo nests is maintained to ensure that covered activities do not affect nest success. If monitoring indicates that construction outside of the buffer is affecting breeding, the buffer will be increased if space allows (e.g., move staging areas farther away). If space does not allow, construction will cease until the young have fledged from the nest or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that a least Bell's vireo flies into an active construction zone (i.e., outside the buffer zone).

Condition 17. Tricolored Blackbird

To avoid direct impacts of covered activities on nesting tricolored blackbird colonies, the following procedures will be implemented.

Habitat Survey

Projects require surveys if the project-specific verified land cover map (see Section 6.8.3 *Item 3: Land Cover Types on Site*) shows that the project area is within 250 feet of any riparian, coastal and valley freshwater marsh (perennial wetlands), or pond land cover types. If a project meets this criterion, a qualified biologist will conduct a field investigation to identify and map potential nesting substrate. Nesting substrate generally includes flooded, thorny, or spiny vegetation (e.g., cattails, bulrushes, willows, blackberries, thistles, or nettles). If potential nesting substrate is found, the project proponent may revise the proposed project to avoid all areas within a 250-foot buffer around the potential nesting habitat and surveys will be concluded.

Preconstruction Survey

If the project proponent chooses not to avoid the potential nesting habitat and the 250-foot buffer, additional nesting surveys are required. Prior to any ground disturbance related to covered activities, a qualified biologist will:

1. Make his/her best effort to determine if there has been nesting at the site in the past 5 years. This includes checking the CNDDB, contacting local experts, and looking for evidence of historical nesting (i.e., old nests).
2. If no nesting in the past 5 years is evident, conduct a preconstruction survey in areas identified in the habitat survey as supporting potential tricolored blackbird nesting habitat. Surveys will be made at the appropriate times of year when nesting use is expected to occur. The surveys will document the presence or absence of nesting colonies of tricolored blackbird. Surveys will conclude no more than two calendar days prior to construction.

To avoid last minute changes in schedule or contracting that may occur if an active nest is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. If a tricolored blackbird nesting colony is present (through step 1 or 2 above), a 250-foot buffer will be applied from the outer edge of all hydric vegetation associated with the site and the site plus buffer will be avoided (see below for additional avoidance and minimization details). The Wildlife Agencies will be notified immediately of nest locations.

Avoidance and Minimization

Covered activities must avoid tricolored blackbird nesting habitat that is currently occupied or have been used in the past 5 years. If tricolored blackbird colonies are identified during the breeding season, covered activities will be prohibited within a 250-foot no-activity buffer zone around the outer edge of all hydric vegetation associated with the colony. This buffer may be reduced in areas with dense forest, buildings, or other habitat features between the construction activities and the active nest colony, or where there is sufficient topographic relief to protect the colony from excessive noise or visual disturbance.

Depending on site characteristics, the sensitivity of the colony, and surrounding land uses, the buffer zone may be increased. Land uses potentially affecting a colony will be observed by a qualified biologist to verify that the activity is not disrupting the colony. If it is, the buffer will be increased. Implementing Entity technical staff will coordinate with the Wildlife Agencies and evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis.

Construction Monitoring

If construction takes place during the breeding season when an active colony is present, a qualified biologist will monitor construction to ensure that the 250-foot buffer zone is enforced. If monitoring indicates that construction outside of the buffer is affecting a breeding colony, the buffer will be increased if space allows (e.g., move staging areas farther away). If space does not allow, construction will cease until the colony abandons the site or until the end of the breeding season, whichever occurs first. The biological monitor will also conduct training of construction personnel on the avoidance procedures, buffer zones, and protocols in the event that tricolored blackbirds fly into an active construction zone (i.e., outside the buffer zone).

Condition 18. San Joaquin Kit Fox

Disturbance of all San Joaquin kit fox dens will be avoided to the maximum extent possible. To avoid or minimize direct impacts of covered activities on San Joaquin kit fox, the following procedures will be implemented. This program was based on USFWS's *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance* (U.S. Fish and Wildlife Service 2011).

Habitat Survey

San Joaquin kit fox surveys will only be required for projects occurring within modeled habitat (**Appendix D**). (This model will be updated as needed based on best available scientific information.) The Implementing Entity will provide updated modeled habitat maps to the County (the only jurisdiction in which these areas occur). A qualified biologist will conduct a field evaluation of suitable breeding or denning habitat for kit fox for all covered activities that occur within modeled habitat and map potential den sites. If the project does not fully avoid impacts on suitable dens, preconstruction surveys will be required. Suitable breeding habitat is fully avoided if the project footprint does not overlap with a suitable den or with a 250-foot buffer around the suitable den.

Preconstruction Survey

Prior to any ground disturbance related to covered activities, a qualified biologist will conduct a preconstruction survey for covered activities in areas identified by species surveys as being suitable breeding or denning habitat. The surveys will evaluate use of dens by kit foxes using methods appropriate for the northern edge of the species' range, such as placing a tracking medium in the project area where suitable dens occur. Surveys will conclude no more than two calendar days prior to construction. To avoid last minute changes in schedule or contracting that may occur if a kit fox or active den is found, the project proponent may also conduct a preliminary survey up to 14 days before construction. On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed unless access is granted within the 250-foot radius. The status of all dens will be determined and mapped. Written results of preconstruction surveys will be submitted to USFWS and CDFG within two calendar days after survey completion and before the start of ground disturbance.

If San Joaquin kit foxes and/or suitable dens (i.e., dens greater than 5 inches in diameter) are identified in the survey area, the conditions described below will be implemented.

Avoidance and Minimization

The goal of the avoidance and minimization measures for San Joaquin kit fox are to avoid all injury or death to kit fox in the study area, and to minimize harm or harassment to the species. No take authorization for injury or death to kit fox is provided by this Plan due to the rarity of the species in the study area. The following avoidance and minimization conditions will be applied to projects that do not fully avoid suitable dens or kit fox individuals.

- If a suitable San Joaquin kit fox den is discovered in the proposed development footprint, the den will be monitored for 3 days by a USFWS- and CDFG-approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.
- Unoccupied dens will be destroyed immediately to prevent subsequent use.
- If a natal or pupping den is found, USFWS and CDFG will be notified immediately. The den will not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFG.
- If kit fox activity is observed at the den during the initial monitoring period, the den will be monitored for an additional 5 consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is

determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated by hand when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal's normal foraging activities). If at any point during excavation a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above will be resumed. Destruction of the den may be completed when, in the judgment of the biologist, the animal has escaped from the partially destroyed den.

- Construction and on-going operational requirements from *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance* (U.S. Fish and Wildlife Service 2011) or the latest guidelines will be implemented.
- If active or suitable dens are identified within the proposed disturbance footprint or outside the proposed project footprint but within a 250-foot buffer, exclusion zones around each den entrance or cluster of entrances will be demarcated. The configuration of exclusion zones will be circular, with a radius measured outward from the den entrance(s). No covered activities will occur within the exclusion zones. Exclusion zone radii for atypical dens and suitable dens will be at least 50 feet and will be demarcated with four to five flagged stakes. Exclusion zone radii for known dens will be at least 100 feet and will be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by the foxes.

Construction Monitoring

If construction takes place while kit fox dens are occupied, a qualified biologist will be present to ensure compliance with the avoidance and minimization measures listed above. The frequency of monitoring will be approved by USFWS and CDFG and will be based on the frequency and intensity of construction activities and the likelihood of disturbance to the active dens. In most cases, monitoring will occur at least weekly, but in some cases daily monitoring may be appropriate to ensure that disturbance of San Joaquin kit fox is minimized.

6.6.2 Covered Plant Species

Impacts on covered plant occurrences are constrained by limits on the number of occurrences impacted, as described in Chapter 4 (see **Table 4-6**). Accordingly, only two additional conditions on covered activities is needed to meet regulatory requirements for covered plants.

Condition 19. Plant Salvage when Impacts are Unavoidable

Where impacts on covered plant species cannot be avoided and plants will be removed by approved covered activities, the Implementing Entity has the option of salvaging the covered plants. Salvage of covered plants is conducted in addition to mitigation that may be required for impacts on covered plants.

Plant salvage as mitigation is acknowledged as a technique that rarely succeeds; it is opposed by conservation organizations as a primary mitigation tool (Howald 1996; California Native Plant Society 1998). Therefore, the Implementing Entity must carefully weigh the expected costs and potential benefits of the salvage effort before undertaking it. Salvage guidelines are presented below for all covered plants, for perennial species, and for annual species.

All Covered Plants

All salvage operations will be conducted by the Implementing Entity or a third party contractor approved by the Implementing Entity. Translocation activities will be reviewed and approved by the Wildlife Agencies in advance of translocation activities occurring. Translocated plants should be moved during their dormant season in order to minimize impacts to individuals. To ensure enough time to plan salvage operations, project proponents will notify the Implementing Entity of their schedule for removing the covered plant occurrence.

The Implementing Entity may conduct investigations into the efficacy of salvaging seeds from the soil seed bank for both perennial and annual species. The soil seed bank may add to the genetic variability of the occurrence. Covered species may be separated from the soil though garden/greenhouse germination or other appropriate means. Some topsoil taken from impact sites may also be moved to the transplant site in the reserve to introduce soil microorganisms.

The Implementing Entity will transplant new occurrences such that they constitute separate populations and do not become part of an existing population of the species, as measured by the potential for genetic exchange among individuals through pollen or propagule (e.g., seed, fruit) dispersal. Transplanting or seeding *receptor* sites (i.e., habitat suitable for establishing a new population) will be carefully selected on the basis of physical, biological, and logistical considerations (Fiedler and Laven 1996); some examples of these are listed below.

- Historic range of the species.
- Soil type.
- Soil moisture.
- Topographic position, including slope and aspect.

- Site hydrology.
- Mycorrhizal associates.
- Presence or absence of typical associated plant species.
- Presence or absence of herbivores or plant competitors.
- Site accessibility for establishment, monitoring, and protection from trampling by cattle or trail users.

Perennial Covered Plants

Salvage methods for perennial species will be tested for whole individuals, cuttings, and seeds. Salvage measures will include the evaluation of techniques for transplanting as well as germinating seed in garden or greenhouse and then transplanting to suitable habitat sites in the field. Techniques will be tested for each species, and appropriate methods will be identified through research and adaptive management. Where plants are transplanted or seeds distributed to the field, they will be located in reserves in suitable habitat to establish new populations. Field trials will be conducted to evaluate the efficacy of different methods and determine the best methods to establish new populations. Transplanting within the reserves will only minimally disturb existing native vegetation and soils. Supplemental watering may be provided as necessary to increase the chances of successful establishment, but must be removed following initial population establishment. Supplemental watering will include watering throughout first growing season to mimic natural rainfall patterns. During establishment, areas will be fenced off as necessary to prevent trampling or grazing by livestock. These areas will not be selected for controlled burns. Once the population has established itself, as determined by success criteria that may include setting seed, 3-year survival, or other criteria developed in agreement with the Wildlife Agencies, then fencing and irrigation will be removed and the site may be burned for management purposes if that is appropriate for the target plant.

Annual Covered Plants

For annual covered plants, mature seeds will be collected from all individuals for which impacts cannot be avoided (or if the population is large, a representative sample of individuals). If storage is necessary, seed storage studies will be conducted to determine the best storage techniques for each species. A seed storage facility will also be contacted and consulted regarding collecting and storage requirements of the facility. One of the leading seed banks in California is the Rancho Santa Ana Botanic Garden in Claremont, CA (Rancho Santa Ana Botanic Garden 2010). This facility has strict seed collection and storage guidelines available on its website (http://www.rsabg.org).

If needed, studies will be conducted on seeds germinated and plants grown to maturity in garden or greenhouse to propagate larger numbers of seed. Such

studies can be contracted with research institutions such as the Rancho Santa Ana Botanic Garden, or carried out by other qualified biologists. Seed propagation methods will ensure that genetic variation is not substantially affected by propagation (i.e., selection for plants best adapted to cultivated conditions). Field studies will be conducted under the Adaptive Management Program to determine the efficacy and best approach for dispersal of seed into suitable habitat. Where seeds are distributed to the field, they will be located in reserves in suitable habitat to establish new populations. If seed collection methods fail (e.g., due to excessive seed predation by insects), alternative propagation techniques will be necessary.

Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences

Almost all known occurrences of covered plants in the study area are outside the planning limits of urban growth and outside the footprint of covered activities. Many of these occurrences are expected to be included in the Reserve System. However, uncertainty remains regarding impacts on covered plants because of the lack of surveys in many areas, the general nature of some plant occurrence data, and the uncertainty in the location of some covered activities. To account for this uncertainty, impacts on covered plants are tracked by occurrence[21], as described in Chapter 4. To ensure compliance with the requirements in Chapter 5, surveys for covered plants will be conducted in certain areas in order to 1) identify occurrences of covered plants, and 2) assess the condition of these occurrences.

Covered Plant Surveys

To ensure that plants are adequately conserved relative to impacts of covered activities, plant surveys will identify occurrences of covered plants that may be affected by covered activities (see Section 5.3.1 *Land Acquisition and Restoration Actions* subheading *Incorporating Covered Plant Species*). Surveys are required in locations where covered plant occurrences are most likely to occur. Covered plant surveys will be required in the following land cover types and specific habitats. The plant species for which surveys are required are also indicated. These land cover types and habitats were identified because the majority of covered species occur primarily or exclusively in serpentine land cover types.

- Serpentine bunchgrass grassland: Survey for smooth lessingia, fragrant fritillary, Metcalf canyon jewelflower, most beautiful jewelflower, Tiburon paintbrush, and Coyote ceanothus.

[21] Occurrence can be synonymous with population for some species. However, some plant species may have several occurrences in one population. Definitions of plant populations will be developed for covered plants during implementation.

- Serpentine rock outcrop: Survey for Santa Clara Valley dudleya, smooth lessingia, Metcalf canyon jewelflower, most beautiful jewelflower, and Tiburon paintbrush.
- Serpentine seep: Survey for Mount Hamilton thistle.
- Mixed serpentine chaparral: Survey for Coyote ceanothus and most beautiful jewelflower.
- Mixed oak woodland and forest with serpentine soils: Survey for Loma Prieta hoita.
- Coast live oak forest and woodland with serpentine soils: Survey for Loma Prieta hoita.
- Northern coastal scrub and Diablan sage scrub with serpentine soils: Survey for Coyote ceanothus, Metcalf canyon jewelflower, most beautiful jewelflower, and smooth lessingia.

Plant surveys will also be required in suitable habitat within a 0.25 mile (1,320 feet) radius of a known occurrence of a covered plant to ensure that known occurrences are located (in most cases, these survey areas will overlap with the land cover types listed above). The Implementing Entity will maintain a map of known occurrences and the survey radius around each one based on this Plan and updates provided by the CNDDB (every six months) for the study area.

These surveys will be performed according to the current applicable guidelines of CDFG and/or USFWS for plant surveys (if available) except no floristic surveys are required. The appropriate survey period for each covered plant species is described in **Table 6-9**[22]. Surveys must be conducted at the time of year when the species can be identified in the field. In some cases, plants may be identifiable outside of the flowering period (e.g., Mount Hamilton thistle, Coyote ceanothus).

Inside the urban service area, surveys for covered plants will occur in land cover types and habitats listed above within the area on which the land cover fee will be levied and in any other areas where indirect effects could occur. The survey area must include buffers around structure where required vegetation clearing will occur to meet state and local fuel reduction regulations.

If a covered plant occurrence is observed on site, the condition of this occurrence must be described in the application package according to the guidelines in Chapter 5, Section 5.3.1 *Land Acquisition and Restoration Activities* subheading *Incorporating Covered Plant Species*. The condition of each covered plant occurrence must be documented as a baseline to compare future monitoring (if necessary) and to ensure that occurrences are protected within the Reserve System that are in as good or better condition than those lost to covered activities.

[22] These survey periods should be used as a guide only. Some plants can be readily identified by qualified botanists outside of the species' blooming period.

If a covered plant occurrence is found on the project site, the local jurisdiction will obtain the opinion of a qualified biologist regarding the projected long-term viability of a covered plant occurrence given the plant occurrence condition, site conditions, and project-level construction details. The qualified biologist will make this determination based on best available scientific information. In cases where it is difficult to project long-term viability, the qualified biologist will conservatively error in favor of the covered plant and assume that long-term viability will be reduced and the occurrence will be considered lost for tracking purposes. Impacts to covered plants will be avoided or minimized wherever possible by implementing the following conditions.

Avoidance and Minimization

In order to reduce impacts to covered plants, all covered activities will be confined to the minimum area necessary to complete the activity or construction. A setback buffer will be established around covered plant occurrences located on any project site or in an adjacent area that could be affected by construction traffic or activities. The setback buffer will be adequate to prevent or minimize impacts during or after project implementation. The plants and buffer area will be protected from encroachment and damage during construction by installing temporary construction fencing. Fencing will be bright-colored and highly visible. Fencing will be designed to keep construction equipment away from plants and prevent unnecessary damage to or loss of plants on the project site. Fencing will be installed under the supervision of a qualified biologist to ensure proper location and prevent damage to plants during installation. Fencing will be installed before any site preparation or construction work begins and will remain in place for the duration of construction. Construction personnel will be prohibited from entering these areas (the exclusion zone) for the duration of project construction.

Site Monitoring, Assessment, and Management

If a qualified biologist determines that the long-term viability of a covered plant occurrence will be reduced (as described below) by implementation of covered activities, the loss must be offset by protection, management, and monitoring of covered plant occurrences in the Reserve System prior to impacts (**Table 5-16**).

Some covered plant occurrences may only be disturbed or partially affected by covered activities, and viability may be maintained. It is important to monitor and, if possible, maintain these occurrences of covered plants where they occur, even if they are not protected within the Reserve System. Covered plant occurrences that are determined to be partially permanently affected by a qualified biologist (i.e., only a portion of the occurrence is impacted) by covered activities will be monitored by the Implementing Entity. The purpose of the monitoring will be 1) to assess whether the impact reduces the long-term viability of the occurrence and whether supplemental management actions are feasible and warranted, and 2) to determine whether the Implementing Entity must protect and

enhance or create[23] occurrences in the Reserve System according to **Table 5-16**. If the impact occurs to less than 5% of the total occurrence as measured by the number of individuals at the time of impact, then the impact is assumed not to affect long-term viability and will not require monitoring nor will it count as a permanent impact (**Table 4-6**). This allowance does not apply to Coyote ceanothus.

When determining viability for the purpose of assessing a partial or permanent impact, the Implementing Entity will consider the following factors.

1. Results of monitoring plant occurrences affected by covered activities (e.g., correlation between pre-project observations and actual viability post-project).
2. Impacts to date to the covered plant species and how close total impacts are to the allowable impact cap in the Plan (e.g., extra care taken when near cap not to exceed the cap).

Specific monitoring protocols and success criteria will be developed during implementation as appropriate for each covered species, according to the guidelines discussed here. Monitoring protocols can draw on those developed for other HCP/NCCPs. It is possible that only a portion of the occurrence will be located on the covered activity project site. In such instances, the monitoring protocol will address this issue. Three possible approaches include the following.

1. If the landowner agrees, the Implementing Entity will obtain access to the adjacent sites on which the rest of the plant occurrence is located, and surveys will include the entire occurrence.
2. If access to adjacent site(s) is not possible, or if for some other reason it is not feasible to survey the entire occurrence, then an alternative will be developed to estimate the extent and condition of the adjacent portion of the occurrence.
3. If only a small portion of the occurrence is on adjacent properties, then only the portion of the occurrence on the project site will be monitored and assessed for viability. The determination whether this is a full impact will be made based on the results for this portion of the occurrence only.

Population monitoring will be conducted by the Implementing Entity before the covered activity is implemented to document the baseline condition. For annual species, the minimum post-construction monitoring period will be 5 years. If extreme or unusual climate conditions affect the species, then monitoring will be extended 1 or 2 years, as appropriate to assess impacts and success. Monitoring will include estimates of percent cover and number of individuals. An occurrence will be assumed to retain long-term viability and will not require replacement in the Reserve System if the decline in occurrence size and percent cover from pre-project conditions is less than 25% over the monitoring period,

[23] Creation is only allowed to mitigate effects for Coyote ceanothus. All other plant occurrence creation would contribute to recovery (**Table 5-16**).

unless site-specific conditions otherwise suggest substantial declines in occurrence viability.

For perennial species, the minimum post-construction monitoring period will be 3 years. Monitoring will include estimates of density (percent cover), recruitment of seedlings if impacts included removing individuals, and measurements of adult plant health (e.g., signs of disease, herbivory, nutrient deficiencies, etc.). An occurrence of a perennial covered species will be assumed to retain long-term viability and will not require replacement in the reserve system if the decline in seedling recruitment and density from pre-project conditions is less than 25% over the monitoring period, unless site-specific conditions otherwise suggest substantial declines in occurrence viability.

The Implementing Entity will implement conservation actions on the site that would help to maintain or improve the condition of the occurrence, as long as an agreement can be reached with the landowner to conduct these measures. Possible conservation measures are described in Chapter 5. If plant occurrences are determined to not be viable based on post-project monitoring, the Implementing Entity must assess the loss as a full permanent impact and implement conservation actions accordingly. In these cases, mitigation would occur after the impact. However, the potential for mitigation to occur after impacts is unlikely given that the qualified biologist and Implementing Entity will make conservative determinations regarding projected impacts on long-term viability.

6.7 Receiving Take Authorization under the Plan

Take authorization will be provided by the Plan to three broad categories of covered activities: public projects proposed by the Permittees, private projects under the jurisdiction of the Permittees, and public projects by non-Permittees in the study area that are approved for inclusion by the Implementing Entity. Each of these situations is explained below.

6.7.1 Evaluation Process for Permittee Projects

The Plan permits provide the Permittees with take authorization along with the authority to approve covered activities complying with the terms of the Plan. If a Permittee undertakes a covered activity (see Chapter 2), the Permittee must document compliance with the Habitat Plan and provide a copy of this documentation to the Implementing Entity for tracking purposes (i.e., to track the amount of take coverage granted) before the Permittee take authorization may be used. As described in Chapter 8, the Permittees will develop a template Habitat Plan application package for use by private applicants and Permittees that includes all items described in this section prior to permit issuance. It is expected that the documentation will be similar to the *Habitat Plan application package*

Appendix F
Initial Study

Appendix F – Initial Study

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Fish and Aquatic Habitat Collaborative Effort (FAHCE)
Fish Habitat Restoration Plan

Initial Study

Santa Clara Valley Water District

August 2018

2365 Iron Point Road, Suite 300
Folsom, CA 95630

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Appendices

Appendix A. Fish Habitat Restoration Plan (*to be attached when finalized*)

Appendix B. Best Management Practices Handbook

Appendix C. SCVWD Stream Maintenance Program Update 2014-2023, Appendix F *Best Management Practices*

ACRONYMS AND ABBREVIATIONS

§	Section
°C	degrees Celsius
AB	Assembly Bill
AF	acre feet
AFY	acre-feet per year
AMT	Adaptive Management Team
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CO	carbon monoxide
CO2	carbon dioxide
County	Santa Clara County
CWMZ	cold water management zone
District	Santa Clara Valley Water District
District Act	Santa Clara Valley Water District Act
DMP	Dam Maintenance Project
DSOD	Division of Safety of Dams
EIR	Environmental Impact Report
ESA	Endangered Species Act
FAHCE	Fish and Aquatic Habitat Collaborative Effort
FHRP	Fish Habitat Restoration Plan
GCRCD	Guadalupe-Coyote Resource Conservation District
GHG	greenhouse gas emissions
HCP	Habitat Conservation Plan
IS	Initial Study
lbs.	pounds
MRZ	mineral resource zones
MT	million tons
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOX	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
$PM_{2.5}$	fine particulate matter
PM_{10}	particulate matter
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCVWD	Santa Clara Valley Water District (District)
SEIR	Supplemental EIR
SWRCB	State Water Resources Control Board

SWPPP	Stormwater Pollution Prevention Plan
TAC	Technical Advisory Committee
Three Creeks	Stevens Creek, the Guadalupe River, and Coyote Creek
USFWS	U.S. Fish and Wildlife Service
VHP	(Santa Clara) Valley Habitat Plan
WRO	water rights order

1 INTRODUCTION

1.1 BACKGROUND

The Santa Clara Valley Water District (District) was created by the California Legislature and operates as a State of California special district, with jurisdiction throughout Santa Clara County (County). The District began managing water resources in the County in 1929, largely in response to overpumping of Santa Clara Valley groundwater. The District constructed conservation reservoirs to capture rainfall and replenish the underground aquifer through managed groundwater recharge.

In 1996, the Guadalupe-Coyote Resource Conservation District (GCRCD) filed a complaint with the State Water Resources Control Board (SWRCB). The complaint alleged that District operations impacted fish and wildlife in conflict with requirements of the Water Code, Fish and Game Code, and other State of California laws. A negotiation process was requested to re-establish adequate flows for the protection of fisheries and other aquatic resources in the watersheds of Stevens Creek, the Guadalupe River, and Coyote Creek (collectively termed the "Three Creeks").

In response to the complaint, the District convened state and federal resource agencies and local environmental organizations in settlement negotiations. This collaboration is referred to as the Fish and Aquatic Habitat Collaborative Effort (FAHCE), and its primary function has been to identify actions needed to balance the District's water supply operations with aquatic habitat needs in the Three Creeks. Measures developed through FAHCE are intended to modify instream flows and improve habitat conditions as appropriate to meet the management objectives specified in the *Settlement Agreement Regarding Water Rights of the Santa Clara Valley Water District on Coyote, Guadalupe, and Stevens Creeks* initialed by the Initialing Parties on May 27, 2003 (Settlement Agreement; http://www.valleywater.org/FAHCE/). Implementation of the actions identified by the FAHCE and described in the Fish Habitat Restoration Plan (FHRP; Appendix A), is a required element of the Settlement Agreement. The FHRP is intended to serve as the basis for settlement between the complainants and the District, if accepted by all parties and would ultimately be incorporated into an SWRCB-issued water rights order (WRO) that amends the District water right licenses in the Three Creeks to resolve the water rights complaint. Additional information on the FAHCE process, members, and Settlement Agreement measures can be found in the Environmental Impact Report (EIR).

As the lead agency responsible for compliance with the California Environmental Quality Act (CEQA), the District has determined that implementation of the FHRP constitutes a "Project" for the purposes of CEQA (pursuant to CEQA Guidelines §15378), and would have the potential to result in significant environmental effects. Accordingly, the District has prepared an EIR for the Project (CEQA Guidelines §15064). This Initial Study (IS) contains a brief description of the Project, including its goals and objectives, and a preliminary analysis of the potential environmental impacts from Project implementation. Where applicable, determination criteria used to conclude "No Impact" or "Less than Significant" for a given resource, which could also eliminate that resource(s) from further consideration in the EIR, is also included in this document. Potentially significant impacts are identified here and are evaluated in further detail in the EIR.

1.2 OVERVIEW OF FISH HABITAT RESTORATION PLAN

The FHRP addresses the issues raised in the original water rights complaint and sets forth a monitoring program and adaptive management process, proposed funding mechanisms, and a schedule for implementation. Given the scale of the FHRP and the term of the Settlement Agreement (up to three 10-year phases and a fourth perpetual phase), watershed measures discussed in this IS and in the EIR will either be evaluated at a project-level or programmatic level of detail, dependent on the amount of information known about an action and its corresponding footprint of disturbance and construction details at the time of this CEQA

evaluation. In either case, all information currently available for any given measure will be disclosed and evaluated in the environmental review document to the extent possible, as required by CEQA.

Phase 1 measures that are included in the FHRP (and are discussed in more detail in Chapter 2 of the EIR) include the following six suites of actions (Settlement Agreement section references are identified in parentheses). Items 1-5 are common to all of Three Creeks, while #6 references measures documented in the Settlement Agreement that are specific to one watershed:

1. **Operational changes to non-emergency flow releases** (§§6.2.4.1, 6.4.2.1.1, 6.5.2.1, 6.6.2.1.2.1, 6.6.2.1.3.16.6.2.1.4, and 6.6.2.1.5; reoperation rule curves). This IS/EIR assessment will provide a project-level evaluation of the FHRP flow measures (i.e., reservoir reoperation rule curves), which constitute potential impacts to environmental resources resulting from the petitions for change to the District's water right licenses and implementation of the new rule curves.
2. **Continuing efforts to improve fish passage through priority barrier remediation** (§§6.2.4.2, 6.4.2.1.2, 6.5.2.2, 6.6.2.1.1, 6.6.2.1.2.2, and 6.6.2.1.3.2). CEQA review for barrier remediation sites will be at a programmatic level. Additional environmental documentation under CEQA will be completed, as necessary, as engineering plans are developed and footprints of disturbance are defined.
3. **Determination of locations, techniques, and schedule to enhance spawning and rearing habitat** for steelhead trout (*Oncorhynchus mykiss*) and Chinook salmon (*Oncorhynchus tshawytscha*; §6.2.4.3). Given that specific locations have not yet been identified for this suite of measures, CEQA review will be at a programmatic level and subject to additional environmental evaluation, as necessary, as measures are further defined.
4. **Development of measures to enhance and restore geomorphic functions** of the three watersheds, including identification of potential pilot projects (§6.2.4.4). For the same reasons provided in #3 above, these measures will be evaluated at a programmatic level of review and subject to further environmental evaluation, as necessary.
5. **Completion of an Advanced Recycled and other Urban Water Plan** in coordination with the City of San Jose (§6.2.4.5). This measure is limited to development of a plan for future water use options; any pilot projects that may result would require separate CEQA review.
6. **Other non-flow measures specific to each of the three watersheds**, as defined in the Settlement Agreement (§§6.4.2.1.3 – 6.4.2.1.5; §§6.5.2.3 – 6.5.2.5; and 6.6.2.1.3.3). For the same reasons provided in #3 above, these measures will be reviewed at a programmatic level and will be subject to further environmental evaluation, as necessary.

Phases 2 and 3 measures, if determined to be necessary to meet FAHCE program objectives, would be implemented as part of the Project's Adaptive Management Plan (AMP) and may require additional CEQA environmental.

2 PROJECT DESCRIPTION

Per CEQA Guideline Section 15124, the project description should include: location and boundaries of the proposed project area; a statement of project objectives; a general description of the characteristics of the project; and a statement describing the intended uses of the EIR, including lists of agencies expected to use the EIR in decision making, permits and other approvals needed to implement the project, and related environmental review and consultation requirements. The following subsections provide an overview of each of these elements to the level of detail necessary for this IS. The EIR, as well as Appendix A *Fish Habitat Restoration Plan* and the 2003 Settlement Agreement (http://www.valleywater.org/FAHCE/) provide more details of project components and can be referenced while reviewing the following summaries.

2.1 PROJECT SETTING AND LOCATION

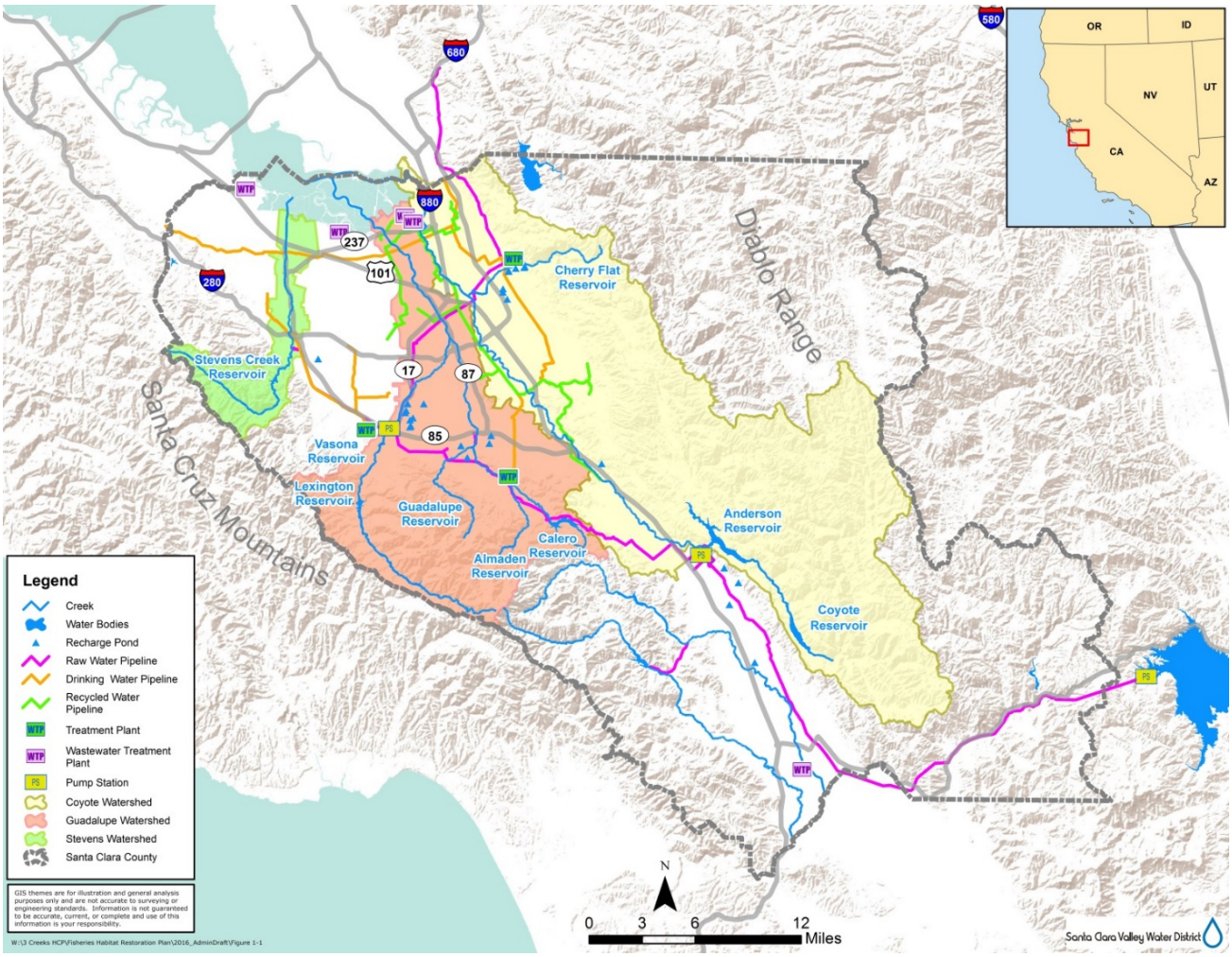
The Project Area encompasses three watersheds in northern Santa Clara County, California, where the SCVWD holds water rights licenses: Coyote Creek, Guadalupe River, and Stevens Creek. The Project Area and District water supply facilities are shown on Figure 2-1.

The District holds 15 water right licenses for water diversions in the Three Creeks, and each license allows diversions for irrigation and domestic uses, currently identified as the "beneficial uses" for these District facilities. The scope of the Project includes changes to the water supply diversions, operations, and operational features that directly affect each of these watersheds– below the most upstream diversion and above the tidal zone. The dams, reservoirs, and facilities located on the Three Creeks with operations addressed by the FHRP include the following:

- Coyote Creek – the District operates Anderson and Coyote Reservoirs in the upper watershed at the origin of Coyote Creek, and in-stream recharge facilities on the Coyote main stem and Upper Penitencia Creek, a tributary to Coyote Creek.
- Guadalupe River – the District operates Lexington, Vasona, Guadalupe, Almaden and Calero Reservoirs on Los Gatos (Lexington and Vasona), Guadalupe, Alamitos, and Calero Creeks, respectively; and in-stream recharge facilities on Los Gatos Creek (Vasona, Kirk, and Camden recharge ponds); Guadalupe Creek (Masson/ Los Capitancillos ponds), Alamitos Creek (Alamitos Flashboard Dam and Alamitos/Guadalupe ponds).
- Stevens Creek – the District operates Stevens Creek Reservoir and water supply facilities in Stevens Creek.

Facilities corresponding to each dam manage and release instream flows to creeks and rivers in the Three Creeks and recharge the Santa Clara Plain portion of the Santa Clara Subbasin, where released water is used to prevent groundwater pumping-related subsidence and also is pumped directly from the creeks to provide municipal and industrial supplies.

Figure 2-1. FAHCE Fish Habitat Restoration Plan Project Area and District Water Supply Facilities



2.2 PROJECT OBJECTIVES

The FHRP is based on the FAHCE Settlement Agreement Overall Management Objectives (Settlement Agreement §6.2.2). As the underlying Project purpose, implementation of these measures is intended to:

> "…restore and maintain healthy steelhead trout and salmon populations as appropriate in each of the Three Creeks by providing (A) suitable spawning and rearing habitat within each watershed, and (B) adequate passage for adult steelhead trout and salmon to reach suitable spawning and rearing habitat and for out-migration of juveniles."

"As appropriate" in the agreement means that the District's implementation of restoration measures must be consistent with the purpose of the Santa Clara Valley Water District Act (District Act), including providing sufficient water for all beneficial uses in Santa Clara County (see discussion in Section 2.1). The Settlement Agreement commits the District and other Initialing Parties to a program of measures intended to restore and maintain fisheries, wildlife, water quality, and other beneficial uses of the Three Creeks in good condition (§6.2.1). The Settlement

Agreement also provides guidance on which species restoration is to target in each of the three watersheds. Essentially, restoration for Central California Coastal steelhead, including reoperation rule curves at District reservoirs, will occur in all of Three Creeks, while actions to benefit Central Valley fall-run Chinook salmon will focus in Coyote Creek and Guadalupe River watersheds.

The fundamental Project objectives are listed below and are intended to be implemented together, in a balanced manner. Project objectives 1, 2, and 3 are subject to Phase 1, 2, and 3 funding obligations and limitations specified in Settlement Agreement Article VIII, Appendices C and D. Objective 4 is fundamental to the District and consistent with the District Act.

Objective 1: *Restore and maintain a healthy steelhead population in the Stevens Creek watershed*, by providing:

- Suitable spawning and rearing habitat below Stevens Creek Dam within a cold water management zone (CWMZ) determined on an annual basis through the development of an operations plan (Settlement Agreement §6.5.1.1);
- Adequate passage for adult steelhead to reach suitable spawning and rearing habitat and for outmigration of juveniles (Settlement Agreement §6.5.1.1); and
- Extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the adaptive management program (AMP; Settlement Agreement §6.5.1.2 and §6.5.1.3).

Objective 2: *Restore and maintain a healthy steelhead and Chinook salmon population in the Coyote Creek watershed*, by providing:

- Approximately 5 miles of spawning and rearing habitat below Anderson Dam and in Upper Penitencia Creek (Settlement Agreement §6.4.1.1);
- Adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles (Settlement Agreement §6.4.1.1); and
- Extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the AMP (Settlement Agreement §6.4.1.2 and §6.4.1.3).

Objective 3: *Restore and maintain healthy steelhead and Chinook salmon populations in the Guadalupe River watershed*, by providing:

- Suitable spawning and rearing habitat for steelhead and Chinook salmon in Guadalupe Creek from below Guadalupe Dam to its confluence with the Guadalupe River (Settlement Agreement §6.6.1.1);
- Suitable spawning and rearing habitat for Chinook salmon below Calero and Almaden Dams to their confluence with Lake Almaden (Settlement Agreement §6.6.1.1);
- Suitable spawning and rearing habitat for Chinook salmon in Los Gatos Creek from Camden Avenue to its confluence with Guadalupe River (Settlement Agreement §6.6.1.1);
- Adequate passage for adult steelhead and Chinook salmon to reach suitable spawning and rearing habitat and for outmigration of juveniles (Settlement Agreement §6.6.1.1); and
- Extended distribution of suitable habitat in Phases 2 and 3, if needed, to satisfy overall management objectives as determined through the adaptive management program (Settlement Agreement §6.6.1.2 and §6.6.1.3).

Objective 4: *Maintain flexible and reliable current and future water supply and water deliveries for municipalities, industries, agriculture, and the environment in a practical, cost-effective, and environmentally sensitive manner so that sufficient water is available for any present or future beneficial use, including, but not limited to, the acquisition, storage (including surface and underground storage), and distribution of water for irrigation, domestic, fire protection, land subsidence prevention, municipal, commercial, industrial, and environmental purposes* (see District Act §5.5).

2.3 PROJECT DESCRIPTION

2.3.1 Phase 1 Measures – Common Elements

Phase 1 of the Project includes four primary elements common to all of Three Creeks that will be included in this CEQA evaluation:

- Reservoir reoperation rule curves (Section 2.3.1.1);
- Fish passage barrier remediation (Section 2.3.1.2);
- Spawning and rearing habitat improvements (Section 2.3.1.3); and
- Geomorphic functions enhancement (Section 2.3.1.4).

An overview of each of these Project elements is provided below; more detail is provided in the EIR and appendices.

2.3.1.1 Reservoir Reoperation Rule Curves

The FAHCE process resulted in a series of reservoir reoperation rule curves that describe planned changes to the release of impounded water from District reservoirs to support the life-cycle needs of steelhead and Chinook salmon. These rule curve parameters form a central element of the Settlement Agreement, identifying seasonal peak flows to facilitate passage of upmigrating adult steelhead and outmigrating steelhead smolts; and to provide instream flows and maintain water temperature suitable for juvenile rearing. The detailed FAHCE rule curves and flow ramping parameters are included as Appendix F *Reservoir Reoperation Rule Curves – FAHCE Settlement Agreement Appendix E* in the FHRP, as excerpted from Appendix E of the Settlement Agreement.

Details on development and intent of the rule curves, along with watershed-specific graphics displaying winter flow rule curves, are provided in the EIR and Chapters 3, 4, and 5 of the FHRP. As noted in Section 1.2, the EIR will evaluate these reoperation rule curves at a project level of detail. Hydrologic modeling of impacts to FHRP-targeted fish species for both existing conditions and proposed with-Project conditions will be used to assess CEQA impacts in the EIR.

2.3.1.2 Fish Passage Barrier Remediation

Removal or replacement of major passage barriers in the Three Creeks, combined with appropriate maintenance of remaining passage structures, is the goal of this element of the FHRP. In turn, these efforts will enhance fish passage to suitable spawning and rearing habitat as discussed in the next sections. As noted in Section 1.2, these barrier remediation measures will be evaluated in the EIR at a programmatic level of detail due to the lack of site-specific plans and field data for each corresponding footprint of disturbance.

Those physical barriers to passage identified in the Settlement Agreement for removal or improvement that are included in the FHRP actions (Project) are shown in Table 2-1. These measures are discussed more thoroughly in the EIR and Chapters 3 through 5 of the FHRP. Barriers that were identified in the Settlement Agreement that were remediated in advance of the FHRP will remain part of the monitoring and adaptive management program, and will continue to be maintained by the District.

Table 2-1. Fish Passage Barriers Identified in the Settlement Agreement for Remediation and Included in the FHRP Project

Watershed/Creek	SA Section Reference	Barrier Name	Ownership	District Role
Stevens Creek Watershed				
Stevens Creek	6.5.2.2(A)	Moffet Fish Ladder	SCVWD	Lead
Stevens Creek	6.5.2.2(A)	Fremont Fish Ladder	SCVWD	Lead
Guadalupe River Watershed				
Guadalupe River Mainstem	6.6.2.1.1(B)	SJ Water Company Low-flow Crossing	San Jose Water Company	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding
Pheasant Creek	6.6.2.1.2.2	Pheasant Creek Culvert	Unknown	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding
Guadalupe Creek	6.6.2.1.2.2	Old Dam	Private	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding
Alamitos Creek	6.6.2.1.3.2	Drop Structure	Private	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding
Coyote Creek Watershed				
Upper Penitencia Creek	6.4.2.1.2(A)	Penitencia Recharge Pond Diversion	SCVWD	Lead
Upper Penitencia Creek	6.4.2.1.2(A)	Overfelt Recharge Pond Diversion	SCVWD	Lead
Coyote Creek	6.4.2.1.2(B)	Ogier Road Quarry Pond Complex	Santa Clara County	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding
Coyote Creek	6.4.2.1.2(B)	Singleton Road Low-flow Crossing	City of San Jose	Reasonable best efforts to partner with owner to remediate barrier and provide Partial Funding

Typical activities that may result in temporary impacts during construction may include:

- Traffic from hauling heavy equipment and materials to and from the project site
- Pruning or removal of riparian vegetation to access the work area
- Channel dewatering within the limits of the active work area
- Disturbance of the channel bed and bank
- Closure or limited use of public trails during construction.

Additionally, any work at manmade fish passage barriers would likely include concrete or asphalt demolition and removal as well as installation of new concrete where necessary. Permanent adverse or beneficial impacts, such as those related to groundwater recharge and terrestrial and aquatic biological resources, could occur at and below the barrier locations as a result of these projects. Project-specific impacts would be analyzed, avoidance and minimization measures identified, and mitigation proposed, as necessary, when design is completed.

Instream work would be limited to the summer work season beginning May 1 and ending October 15. Flows in the three creeks are lowest during this time but dewatering would be necessary for most projects. Dewatering of the instream work area would consist of placing a coffer dam upstream of the work area to temporarily impound water. The impounded water would be piped around the active work area using either pumps placed in the impoundment pool or a gravity-fed inlet. The water would be released into the active channel below the project area. Rock may be placed below to the pipe outlet as an energy dissipation measure to reduce erosion of the channel bed.

Work would typically occur during normal business hours, Monday through Friday, 7:00 a.m. to 5:00 p.m. in accordance with local ordinances.

In cases where the District owns the facility, barriers will be remediated by replacing or removing the existing barrier and costs of remediation would be a responsibility of the District. Where the facility is owned by another entity, the District would make reasonable best efforts to partner with the owner of the facility to remove or remediate the barrier and provide up to 50 percent of the cost for the remediation.

2.3.1.3 Spawning and Rearing Habitat Improvements

Spawning habitat includes areas where eggs are deposited and fertilized, and where gravel emergence occurs. Rearing habitat is defined as areas where juvenile fish take up residence during some stage of development and utilize the area for feeding, shelter, and growth.

Per §6.2.4.3 of the Settlement Agreement, in cooperation with CDFW and NMFS, in Phase 1 the District was tasked to develop and implement a FHRP that would:

> "…specify techniques, locations, and implementation schedules to enhance spawning and rearing habitats for steelhead trout and Chinook salmon in the Three Creeks."

Ongoing evaluation of the potential impacts on instream habitat associated with implementation of the reservoir reoperation rule curves (Section 2.3.1.1), along with monitoring efforts, will allow the District to identify site-specific measures, locations, and timing for future spawning and rearing habitat improvements. The intent of these habitat improvements is to help meet the overall objectives of the FHRP (Section 2.2). As noted in Section 1.2, given the lack of specific locations and actions at the time of this CEQA assessment, measures related to enhancement of spawning and rearing habitat are discussed at a programmatic level of detail and may require additional environmental review under CEQA prior to implementation.

2.3.1.3.1 Spawning and Rearing Habitat Restoration Actions

The third Phase I implementing measure common to all Three Creeks watersheds and identified in the FHRP focuses on making improvements to spawning and rearing habitat. The District will develop annual work plans for spawning gravel augmentation and rearing habitat enhancements for AMT (see Section 2.6.2) review, the first of which will be prepared following final Board approval of the FHRP. Spawning habitat includes areas where eggs are deposited and fertilized, and where gravel emergence occurs. Rearing habitat is defined as areas where juvenile fish take up residence during some stage of development and utilize the area for feeding, shelter, and growth.

The Settlement Agreement (§6.2.4.3.1) included four elements to enhance spawning habitat, including:

- A program for placement of gravel to enhance existing spawning habitat in accordance with the AMP (see Chapter 7 of the FHRP);
- Identification of existing habitat that is suitable for spawning but does not contain adequate spawning gravel;
- Procedures to develop an annual work plan for the AMT's review; and
- Commitment to implement the program, subject to periodic review and modification by the AMT.

Similar to §6.2.4.3.1 related to spawning habitat, §6.2.4.3.2 of the Settlement Agreement calls for the FHRP to include a program to enhance rearing habitat in accordance with the AMP. This program would outline:

- Locations for appropriate placement of large organic debris, channel modifications including berms, and riparian canopy enhancement;
- Procedures to develop an annual work plan for the AMT's review; and
- The District's commitment to implement the program, subject to periodic review and modification by the AMT.

Ongoing evaluation of the impacts on instream habitat associated with implementation of the reservoir reoperation rule curves, along with monitoring efforts, will allow the District to identify site-specific measures, locations, and timing for future spawning and rearing habitat improvements. The intent of these habitat improvements is to help meet the overall objectives of the Proposed Project.

Habitat restoration and enhancement restoration measures within the program would be implemented at those locations where the benefit to aquatic species is greatest. Restoration and enhancement activities focused on improving spawning and rearing would generally occur in the upper watershed of the three creeks. Project sites would be selected through a separate project based on data collected as part of the FHRP monitoring. Site selection and project design will follow the methodologies and techniques of the California Salmonid Stream Habitat Restoration Manual (Flosi *et al* 2010).

Instream habitat enhancement projects may include, but not be limited to, installation of rock or log weirs to improve habitat complexity or passage, installation of root wads or large woody debris to provide cover, and placement of appropriately sized gravels within the limits of the bankfull channel (stage at which water is at the top of its banks and any further rise would result in water moving into the floodplain) to increase suitable spawning habitat. Specific methods and techniques for placement and anchoring will be made during project design. Impacts associated with these projects will be analyzed on a project-by-project basis in future CEQA documents as design documents are prepared.

Instream work would be limited to the summer work season beginning May 1 and ending October 15. Flows in the three creeks are lowest during this time but dewatering would be necessary for most projects. Dewatering of the instream work area would consist of placing a coffer dam upstream of the work area to temporarily impound water. The impounded water would be piped around the active work area using either pumps placed in the impoundment pool or a gravity-fed inlet. The water would be released into the active channel below the project area. Rock may be placed below to the pipe outlet as an energy dissipation measure to reduce erosion of the channel bed.

Work would typically occur during normal business hours, Monday through Friday, 7:00 a.m. to 5:00 p.m. in accordance with local ordinances.

2.3.1.4 Geomorphic Functions Enhancement

The geomorphic functions of a stream are dynamic and interrelated physical, chemical, and biological processes that create and maintain the character of a stream and its associated riparian habitat. The geomorphology of high functioning streams supports habitat diversity, maintains channel equilibrium, and provides a sediment source and storage for riparian and aquatic habitat succession.

Restoration of geomorphic functions as defined in the Settlement Agreement in §6.2.4.4 would occur in Phase 1 and could include any of the following channel enhancements: modifying channel dimensions for the purpose of carrying bank-full flow; varying the meander shape; planting riparian vegetation; removing culverts, riprap, and other structures; and stabilizing the area with the use of bioengineering techniques. Given the preliminary stage of planning for these measures, geomorphic functions will also be assessed in this CEQA process at a programmatic level of detail and may require additional environmental review under CEQA prior to implementation. The following elements provide some guidance from the Settlement Agreement, as discussed in the FHRP.

2.3.1.4.1 Geomorphic Functions Study and Pilot Projects

The Settlement Agreement §6.2.4.4.1 and §6.2.4.4.2) guides the District in preparation of a Geomorphic Functions Study to include:

- Identification of stream reaches where geomorphic functions necessary for channel maintenance or formation are impaired;
- Evaluation of the feasibility of restoring geomorphic functions in those stream reaches identified as impaired; and
- Development and implementation of pilot projects based on the feasibility analysis noted above. A goal of a minimum of 2,000 linear feet of channel in each of the Three Creeks was also noted in the Settlement Agreement.

The Geomorphic Functions Study and pilot projects as defined in the Settlement Agreement in §6.2.4.4 would occur in Phase 1. Pilot projects could include any of the following channel enhancements: modifying channel dimensions for the purpose of carrying bankfull flow; varying the meander shape; planting riparian vegetation; removing culverts, riprap, and other structures; and stabilizing the area with the use of bioengineering techniques.

Geomorphic function restoration projects may occur along any reach of creek within the program area. Fish passage improvement projects may occur anywhere along the creeks included in the program. Project sites will be selected through a separate project based on data collected as part of the FAHCE FHRP monitoring. Site selection and project design will follow the methodologies and techniques of the California Salmonid Stream Habitat Restoration Manual (Flosi *et al* 2010).

Restoration of geomorphic function projects may include, but not be limited to, modification of channel dimensions and shape, installation of rock or log weirs to improve habitat complexity or passage, and installation of root wads or large woody debris to provide cover. Specific methods and techniques for placement and anchoring will be made during project design. Impacts associated with these projects would be analyzed on a project-by-project basis as design documents are prepared.

Instream work will be limited to the summer work season beginning May 1 and ending October 15. Flows in the three creeks are lowest during this time but dewatering would necessary for most projects. Dewatering of the instream work would consist of placing a coffer dam upstream of the work area to temporarily impound water. The impounded water would be piped around the active work area using either pumps placed in the impoundment pool or using a gravity fed inlet. The water would be released into the active channel below the project area. Rock may be placed below to the pipe outlet as an energy dissipation measure to reduce erosion of the channel bed.

Work would typically occur during normal business hours, Monday through Friday, 7:00 a.m. to 5:00 p.m. in accordance with local ordinances.

Given the preliminary stage of planning for these measures, geomorphic functions would also be assessed in this CEQA process at a programmatic level of detail and may require additional environmental review under CEQA prior to implementation. The FHRP provides guidance on developing a geomorphic functions study to better define the optimal locations and approach to these enhancements and establishing bank stabilization guidelines.

2.3.1.4.2 Bank Stabilization Guidelines

The District was also tasked to establish general guidelines for bank stabilization projects undertaken by itself and others. Per §6.2.4.4.3 of the Settlement Agreement, the guidelines will include techniques and strategies based on the ability of riparian vegetation to hold soil, protect banks, and otherwise stabilize the stream channel. It will also address use of structures to rebuild a stream bank and offer stability until riparian vegetation is established. The bank stabilization guidelines will be completed during Phase 1.

2.3.2 Phase 1 Measures – Watershed-specific Actions

Additional measures were documented in the Settlement Agreement that are specific to Stevens Creek, Coyote Creek, and/or Guadalupe River. Most of these measures are limited to development of a plan, cooperative agreement, or feasibility study to identify alternatives for future actions that could further attainment of the FAHCE biological objectives. Implementation of any pilot studies or other on-the-ground actions, or changes to operational management of facilities, resulting from these studies would be included in Phases 2 or 3 (see Section 2.3.3 below) and would require additional environmental review. These documents, which will be prepared during Phase 1, include:

- Coyote Creek Facilities Plan – this proposed plan has two parts: Laguna Seca Groundwater Remediation plan to evaluate alternatives to manage groundwater inflow to Coyote Creek, and Metcalf Ponds Stream Corridor Restoration plan to evaluate alternatives to isolate percolation ponds, quarry pits and other structures from the active channel at Metcalf Road. Depending on the results of the feasibility assessments conducted for the Coyote Creek Facilities Plan in Phase 1, specific design and implementation methodologies for resultant proposed measures would be selected through the AMP. Both components of the plan would be coordinated with NMFS and CDFW. Completion of this facilities plan, as well as any future adaptive-management activities, are included in the Proposed Project.
- Cooperative Agreement for Cherry Flat Reservoir (Coyote Creek) – the District will undertake reasonable best efforts to develop and execute an agreement with the City

of San Jose regarding operation of Cherry Flat Reservoir on Upper Penitencia Creek to help ensure that habitat upstream of the District's facilities is kept in good condition subject to availability of water for release from the reservoir. Proposed operational plans for both City of San José and District facilities, along with monitoring and future activities for adaptive management, are included in the Proposed Project.

- Feasibility Study of trap-and-truck operations at Anderson and Coyote Reservoirs, and at Stevens Creek Reservoir (Coyote Creek and Stevens Creek) – studies to evaluate suitability of spawning and rearing habitat and the practicality of moving steelhead above the reservoirs. . Implementation of trap-and-truck operations would occur as part of future phases of the Proposed Project and would require additional CEQA assessment and other regulatory approvals. The AMT would consider implementation of a trap-and-truck operation, if found to be feasible in the Phase 1 study, as part of future project phases.
- Alamitos Creek Facilities Plan (Guadalupe River watershed) – the proposed plan has two parts: an evaluation for Almaden Dam to assess potential alternatives to improve passage, decrease water temperature, and minimize or eliminate methylation of mercury in sediments, and an alternatives evaluation to isolate Almaden Lake from Alamitos Creek and Guadalupe Creek and to screen flows into Almaden Lake to eliminate entrainment and impingement of steelhead and Chinook salmon.

At Stevens Creek, the Settlement Agreement also documents one additional physical measure that would be implemented in Phase 1: construction, installation, and operation of a portable multi-port outlet at Stevens Creek Reservoir to manage release of reservoir waters to maintain or enhance water temperatures for steelhead rearing. . Construction of a portable multiport outlet would allow for increased flow releases during the summer from Stevens Creek Reservoir while meeting instream water temperature objectives, and improve coldwater pool management in the reservoir. Performance measures of the portable multiport outlet would depend on how the operations of the outlet are defined, which would be carried out through the AMP. Operational rules would be defined to optimize the dual objectives of habitat management (including thermal habitat conditions) and instream recharge. Performance measures for the multiport outlet would be associated with the performance measures for summer rearing flows.

This action will be assessed here as part of the Phase 1 non-flow measures at a programmatic level of CEQA review and will be subject to additional environmental review, as necessary, when designs are completed.

2.3.3 Phases 2, 3, and 4 Measures

As discussed earlier in this document, Phases 2 and 3 measures are included in the AMP, as they are only to be implemented if Phase 1 actions do not meet the overall I Project objectives. Phase 4 is the final phase; since Phases 2 and 3 are contingent on meeting certain criteria (described below), Phase 4 could follow Phase 1 if these criteria are not met. This last phase requires continuation of any flow and other measures, along with maintenance, monitoring and adaptive management into perpetuity.

2.3.3.1 Phases 2 and 3

Section 6.1.1 of the Settlement Agreement sets the criteria for implementing Phases 2 or 3 as:

- Parties agree that the Overall Management Objectives defined in the preceding phase(s) have not yet been satisfied at the end of the 10-year term of immediately preceding phase; and
- The proposed measures are deemed feasible under CEQA and NEPA; and
- The proposed measures are anticipated to contribute to meeting the Overall Management Objectives in a cost-effective manner.

As discussed above, Phases 2 and 3 are included in the AMP. The Settlement Agreement states that any Phase 2 and 3 measures that could be implemented for any of the Three Creeks would be defined by feasibility studies from Phase 1 (see Section 2.3.2). It is expected that measures implemented in Phases 2 or 3 would be similar in nature to those of Phase 1.

Management objectives for each of the Three Creeks for Phases 2 and 3 are defined in the Settlement Agreement and described below.

2.3.3.1.1 Stevens Creek

The Phase 2 Stevens Creek management objective is to extend the distribution of suitable fishery habitat for steelhead up to an additional five miles above Stevens Creek Reservoir or an additional two miles below the reservoir, as determined feasible (Section 6.5.1.2). Phase 3 furthers the extension of suitable habitat for steelhead to include suitable tributaries or above the reservoir (Section 6.5.1.3). A menu of possible measures for Stevens Creek are included in Section 6.5.3 of the Settlement Agreement; however, the list is not exhaustive and other actions could be designed and implemented during adaptive management, dependent on monitoring results captured in the 10 years following implementation of Phase 1 actions.

2.3.3.1.2 Coyote Creek

The Phase 2 Coyote Creek management objective is to extend distribution of suitable habitat for both Chinook salmon and steelhead up to an additional five miles below Anderson Dam, or up to ten miles above Anderson Reservoir or Coyote Reservoir, as determined feasible (Section 6.4.1.2 of Settlement Agreement). Phase 3 objectives extend the same efforts into suitable tributaries or above Anderson or Coyote Reservoirs (Section 6.4.1.3). A menu of possible actions for Coyote Creek watershed is provided in Section 6.4.2.2 of the Settlement Agreement, but as in all of the Three Creeks, development of AMP actions will rely on monitoring results captured during Phase 1.

2.3.3.1.3 Guadalupe River

The Phase 2 Guadalupe River watershed management objective is to extend the distribution of suitable fishery habitat for steelhead up to an additional three miles above Almaden Reservoir or below either Calero Reservoir or Almaden Reservoir to its confluence with Lake Almaden, as determined feasible (Section 6.6.1.2). Phase 3 furthers the extension of suitable habitat for steelhead to below Calero and Almaden reservoirs or above Almaden Reservoir (Section 6.6.1.3). A menu of possible actions for Guadalupe River watershed are provided in Section 6.6.2.2 of the Settlement Agreement; however, development of AMP actions will rely on monitoring results captured during Phase 1.

2.3.3.2 Phase 4

Phase 4 actions are general to all of Three Creeks and will follow previous phase(s) in perpetuity, or for as long as the District diverts water under its licenses and permits. Phase 4 includes maintenance of instream flows in accordance with previous phases, long term monitoring of measures implemented as part of the FAHCE Program, and maintenance of facility improvements and other non-flow measures implemented in previous phases (Section 6.7 of the Settlement Agreement). Bounds to the District's financial responsibility for long term monitoring and maintenance costs related to FAHCE Program actions are provided in Sections 6.7.2 and 6.7.3.

2.4 BEST MANAGEMENT PRACTICES

During Project implementation, the District would incorporate a range of District BMPs, as well as project-specific BMPs to avoid and minimize adverse effects on the environment. District BMPs are outlined in the 2014-Best Management Practices Handbook, and are summarized in Table 2-2, below (SCVWD 2014b). Per the Best Management Practices Handbook, for ease in application, the BMPs have been organized into the standard environmental factors found in the Initial Study Checklist, consistent with CEQA Guidelines. BMPs are generally used by the

District for construction projects and may be customized for the Project, as necessary, to ensure that the intended goal of measure is achieved. BMPs are designed to address effects of certain work activities on particular types of resources.

Examples of project-specific BMPs incorporated into the project, and referenced specifically in the Environmental Checklist include:

- Project construction activities would be completed during daylight hours. The District does not propose nighttime construction except during emergency activities.
- To the extent feasible, changes would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure.
- Project design and construction details would be developed and evaluated by the District during the EIR process and included in the Project description.
- Construction activities would be temporary and short-term, and would occur outside of the noise restricted hours outlined in the applicable city and/or county noise ordinances.
- Project implementation would include early and ongoing coordination with the County to maintain access to County park and recreational facilities throughout the construction process.
- The District would maintain emergency access to individual work sites that are part of the Project and to adjacent areas during and following construction.

The District BMPs applicable to the Project are summarized in Table 2-2, below and full descriptions from the BMP Handbook are in Appendix B.

Table 2-2 District BMPs

Number	Title	Description
		Air Quality
AQ-1	Use Dust Control Measures	Bay Area Air Quality Management District (BAAQMD) Dust Control Measures will be implemented.
AQ-2	Avoid Stockpiling Odorous Materials	Materials with decaying organic material, or other potentially odorous materials, will be handled in a manner that avoids impacting residential areas and other sensitive receptors.
		Biological Resources
BI-1	Avoid Relocating Mitten Crabs	Sediment potentially containing Chinese Mitten Crabs will not be transported between San Francisco Bay Watersheds and Monterey Bay Watersheds.
BI-2	Minimize Impacts to Steelhead	Minimize potential impacts to salmonids by avoiding routine use of vehicles and equipment in salmonid streams between January 1 and June 15.
BI-3	Remove Temporary Fills	Temporary fill materials, such as for diversion structures or cofferdams, will be removed when work is finished, or as appropriate.
BI-4	Minimize Adverse Effects of Pesticides on Non-target Species	Pesticides will be handled, stored, transported, and used in compliance with any established directions and in a manner that minimizes negative environmental effects on non-target species and sensitive habitats.
BI-5	Avoid Impacts to Nesting Migratory Birds	The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction.
BI-6	Avoid Impacts to Nesting Migratory Birds from Pending Construction	Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur.
BI-7	Minimize Impacts to Vegetation from Survey Work	Survey cross-sections will be moved, within acceptable tolerances, to avoid cutting dense riparian vegetation and minimize cutting of woody vegetation, taking advantage of natural breaks in foliage.
BI-8	Choose Local Ecotypes Of Native Plants and Appropriate Erosion-Control Seed Mixes	Whenever native species are prescribed for installation, seed selection shall be ecologically appropriate as determined by a qualified biologist.

Number	Title	Description
BI-9	Restore Riffle/Pool Configuration of Channel Bottom	The channel bottom shall be re-graded at the end of the work project to as close to original conditions as possible. In salmonid streams, restore pool and riffle configurations to emulate pre-project instream conditions.
BI-10	Avoid Animal Entry and Entrapment	All pipes, hoses, or similar structures, if less than 12 inches diameter, will be closed or covered to prevent animal entry, and if greater than 2-inches diameter and stored at a construction site overnight, will be inspected thoroughly for wildlife before the pipe is buried, capped, used, or moved. All excavations more than 6-inches deep will be secured against animal entry at the close of each day.
BI-11	Minimize Predator-Attraction	Remove trash daily from the worksite to avoid attracting potential predators to the site.
Cultural Resources		
CU-1	Accidental Discovery of Archaeological Artifacts or Burial Finds	If historical or unique archaeological artifacts, or burial finds, are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met.
Hazards and Hazardous Materials		
HM-1	Comply with All Pesticide Application Restrictions and Policies	Pesticide products are to be used only after an assessment has been made regarding environmental, economic, and public health aspects of each of the alternatives. All pesticide use will be consistent with approved product specifications.
HM-2	Minimize Use of Pesticides	In all cases, where some form of pest control is deemed necessary by the PCA; evaluate alternative pest control methods and pesticides.
HM-3	Post Areas Where Pesticides Will Be Used	Posting of areas where pesticides are to be used shall be performed in compliance with Q751D02: *Control and Oversight of Pesticide Use*, and with the label requirements of the product being applied. The District shall provide posting for any products applied in areas used by the public for recreational purposes, and areas readily accessible to the public.
HM-4	Comply with All Pesticide Usage Requirements	All projects that propose ongoing use of pesticides will comply with all provisions of Q751D02: *Control and Oversight of Pesticide Use*.
HM-5	Comply with Restrictions on Herbicide Use in Upland Areas	Consistent with provisions of Q751D02: *Control and Oversight of Pesticide Use*, application of pre emergence (residual) herbicides to upland areas will not be made within 72 hours of predicted significant rainfall.

Number	Title	Description
HM-6	Comply with Restrictions on Herbicide Use in Aquatic Area	Consistent with provisions of Q751D02: *Control and Oversight of Pesticide Use*, only herbicides and surfactants registered for aquatic use will be applied within the banks of channels within 20 feet of any water present. Aquatic herbicide use will be limited to June 15th through October 31st with an extension through December 31 or until the first occurrence of local rainfall greater than 0.5 inches is forecasted within a 24-hour period from planned application events; or when steelhead begin upmigrating and spawning in the 14 steelhead creeks. If rain is forecast then application of aquatic herbicide will be rescheduled.
HM-7	Restrict Vehicle and Equipment Cleaning to Appropriate Locations	Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites.
HM-8	Ensure Proper Vehicle and Equipment Fueling and Maintenance	No fueling or servicing will be done in a waterway or immediate flood plain, unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).
HM-9	Ensure Proper Hazardous Materials Management	Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.
HM-10	Utilize Spill Prevention Measures	Prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water.
HM-11	Ensure Worker Safety in Areas with High Mercury Levels	To ensure worker safety is protected in areas with elevated mercury concentrations in exposed surfaces, personal protective equipment will be required during project construction to maintain exposure below levels established by the California Division of Occupational Safety and Health (Cal/OSHA).
HM-12	Incorporate Fire Prevention Measures	All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site. An extinguisher shall be available at the project site at all times when welding or other repair activities that can generate sparks are occurring. Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals or vegetation.
HM-13	Avoid Impacts from Naturally Occurring Asbestos	The District will comply with and implement BAAQMD dust control measures and notification requirements when working in serpentine soils.

Number	Title	Description
	Hydrology/Water Quality	
WQ-1	Conduct Work from Top of Bank	For work activities that will occur in the channel, work will be conducted from the top of the bank if access is available and there are flows in the channel.
WQ-2	Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms	Field personnel will use the appropriate equipment for the job that minimizes disturbance to the stream bottom.
WQ-3	Limit Impact of Pump and Generator Operation and Maintenance	Pumps and generators will be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.
WQ-4	Limit Impacts From Staging and Stockpiling Materials	To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. All equipment and materials will be contained within the existing service roads, paved roads, or other pre-determined staging areas. Building materials and other project-related materials will not be stockpiled or stored where they could spill into water bodies or storm drains. No runoff from the staging areas may be allowed to enter water ways without being subjected to adequate filtration. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control. During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers.
WQ-5	Stabilize Construction Entrances and Exits	Measures will be implemented to minimize soil from being tracked onto streets near work sites.
WQ-6	Limit Impact of Concrete Near Waterways	Concrete that has not been cured is alkaline and can increase the pH of the water; fresh concrete will be isolated until it no longer poses a threat to water quality.
WQ-7	Isolate Work in Tidal Areas With Use of Coffer Dam	For work in tidal areas, It is preferable to isolate one side of the channel with a cofferdam and allow flows to continue on the other side of the creek.
WQ-8	Minimize Hardscape in Bank Protection Design	Bank repair techniques appropriate to a given site based on hydraulic and other site conditions will be selected.

Number	Title	Description
WQ-9	Use Seeding for Erosion Control, Weed Suppression, and Site Improvement	Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete.
WQ-10	Prevent Scour Downstream of Sediment Removal	After sediment removal, the channel will be graded so that the transition between the existing channel both upstream and downstream of the work area is smooth, and continuous between the maintained and non-maintained areas, and does not present a sudden vertical transition or other blockage that could erode once flows are restored to the channel.
WQ-11	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.
WQ-12	Manage Well or Exploratory Boring Materials	All materials or waters generated during drilling, well or exploratory boring construction, well development, pump testing, or other activities associated with wells or exploratory borings, will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such.
WQ-13	Protect Groundwater from Contaminates Via Wells or Exploratory Borings	Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality. Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants.
WQ-14	Backfill Completed Exploratory Borings	All borings should be backfilled within 24 hours of termination of testing. Borings will not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings will be secured such that they do not endanger public health. All borings must be properly destroyed by backfilling with acceptable sealing materials.

Number	Title	Description
WQ-15	Prevent Water Pollution	Oily, greasy, or sediment laden substances or other material that originate from the project operations and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife will not be allowed to enter, or be placed where they may later enter, any waterway. The project will not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity. Water turbidity changes will be monitored.
WQ-16	Prevent Stormwater Pollution	Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).
WQ-17	Manage Sanitary and Septic Waste	Temporary sanitary facilities will be located on jobs that last multiple days, in compliance with California Division of Occupational Safety and Health (Cal/OSHA) regulation 8 California Code of Regulations 1526. All temporary sanitary facilities will be located where overflow or spillage will not enter a watercourse directly (overbank) or indirectly (through a storm drain).
Transportation/Traffic		
TR-1	Use Suitable Public Safety Measures	Fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.

Avoidance and minimization measures from the Santa Clara VHP Conditions (http://scv-habitatagency.org/178/Santa-Clara-Valley-Habitat-Plan) would also be applied to the Project, as applicable. The VHP Conditions are summarized in Table 2-3; full descriptions from the Santa Clara VHP are in Appendix C.

Table 2-3 Santa Clara VHP Conditions

Number	Title	Description
Condition 1	Avoid Direct Impacts on Legally Protected Plant and Wildlife Species	This condition requires that covered projects comply with regulations addressing species or impacts not covered by the Habitat Plan.
Condition 2	Incorporate Urban-Reserve System Interface Design Requirements	This condition is intended to ensure that new urban development adjacent to the Habitat Plan Reserve System or on lands eligible for enrollment into the Reserve System avoids and minimizes potential direct or indirect effects on covered species and natural communities.
Condition 3	Maintain Hydrologic Conditions and Protect Water Quality	This condition is intended to minimize hydrology-related impacts on watershed health (water quality and aquatic habitat) from construction and development projects and includes minimizing the amount of new runoff from impervious surfaces, erosion, and sedimentation.
Condition 4	Avoidance and Minimization for In-Stream Projects	This condition is intended to minimize impacts on aquatic land cover types and covered species found in streams from projects that require construction within streams.
Condition 5	Avoidance and Minimization Measures for In-Stream Operations and Maintenance	This condition is intended to minimize impacts on aquatic and riparian land cover types and covered species from operations and maintenance.
Condition 7	Rural Development	This condition is intended to minimize impacts from rural development projects on covered species and sensitive land cover types covered under the Plan, including potential interface with the Habitat Plan Reserve System and potential impacts from new vineyard projects.
Condition 8	Avoidance and Minimization Measures for Rural Road Maintenance	This condition is intended to minimize potential impacts on covered species and sensitive land cover types covered under the Habitat Plan from public agency rural road maintenance activities. This includes incorporating best management practices to limit erosion and vegetation disturbance during maintenance activities.
Condition 9	Prepare and Implement a Recreation Plan	This condition is intended to minimize the impacts on covered species and sensitive land cover types covered under the Habitat Plan of new recreation activities (trails, picnic areas) within the Habitat Plan Reserve System.
Condition 10	Fuel Buffer	This condition describes when fuel buffers are required and how their impacts are accounted for within the Habitat Plan.

Number	Title	Description
Condition 11	Stream and Riparian Setbacks	This condition requires that new covered projects adhere to setbacks from creeks and streams and associated riparian vegetation in the Plan Area to minimize and avoid impacts from covered projects on aquatic and riparian land cover types, covered species, and wildlife corridors within these areas.
Condition 12	Wetland and Pond Avoidance and Minimization	This condition is intended to ensure that covered projects avoid and minimize impacts on wetland and ponds, including minimizing erosion and new runoff that could degrade these sensitive land cover types.
Condition 13	Serpentine and Associated Covered Species Avoidance and Minimization	This condition is intended to minimize the impacts on serpentine habitat from covered projects, including minimizing direct impacts on the Bay checkerspot butterfly and serpentine plants that are covered by the Habitat Plan.
Condition 14	Valley Oak and Blue Oak Woodland Avoidance and Minimization	This condition is intended to minimize the impacts on sensitive oak woodland habitat from covered projects, including maintaining a development setback from oak tree canopies and minimizing new irrigation in these areas.
Condition 15	Western Burrowing Owl	This condition is intended to ensure that covered projects do not directly affect burrowing owl individuals during construction/development.
Condition 16	Least Bell's Vireo	This condition is intended to ensure that covered projects do not directly affect individual least Bell's vireos during construction/development.
Condition 17	Tricolored Blackbird	This condition is intended to ensure that covered projects do not directly affect nesting tricolored blackbird colonies during construction/development.
Condition 18	San Joaquin Kit Fox	This condition is intended to ensure that covered projects do not directly affect individual San Joaquin kit foxes and dens during construction/development.
Condition 19	Plant Salvage when Impacts are Unavoidable	Requirements of Condition 19 are integrated into the requirements of Condition 20, below.
Condition 20	Avoid and Minimize Impacts to Covered Plant Occurrences	These two conditions are intended to ensure that covered projects avoid or minimize impacts on covered plants.

In addition to BMPs listed above, the District will employ other routine BMPs included in the 2014-2023 Stream Maintenance Program (SMP) Manual (SCVWD 2014a) to further minimize impacts to the environment. Although Project measures are not specifically included in the SMP, in-stream activities that implement some Project measures are very similar to SMP activities, for example implementation of the Project's spawning and hearing habitat improvements. Implementation of these routine SMP BMPs would further minimize impacts to the environment. The SMP BMPs applicable to the Project are summarized in Table 2-4, below, and full descriptions are in Appendix D.

Table 2-4 SMP BMPs

Number	Title	Description
		General BMPs
GEN-1	In-Channel Work Window	All ground-disturbing maintenance activities occurring in the channel will take place between June 15 and October 15. Requests for work window extensions must be submitted to the regulatory agencies by October 1st, listing the creek names and reaches where a work extension will occur. Work extensions vary per work activity. The agencies will provide a single response within one week. Significant rainfall applies after October 15.
GEN-2	Instream Herbicide Application Work Window	Instream herbicide applications will take place between June 15 and October 15, or until the first occurrence of any of the following conditions; whichever happens first: local rainfall greater than 0.5 inches is forecasted within a 24-hour period from planned application events; or when steelhead begin upmigrating and spawning in the 14 anadromous steelhead creeks, as determined by a qualified biologist (typically in November/December).
GEN-3	Avoid Exposing Soils with High Mercury Levels	Sediment removal and bank stabilization projects in portions of the Guadalupe River watershed affected by historic mercury mining may expose soils containing mercury. In Basin Plan identified creeks in the Guadalupe River Basin, soils that are likely to be disturbed or excavated shall be tested for mercury (Hg). Soils shall be remediated if disturbed or excavated soils exposed to streamflow have a residual sample test exceeding 0.2 mg mercury per kg erodible sediment (dry wt., median).
		Biological Resources
GEN-4	Minimize the Area of Disturbance	To minimize impacts to natural resources, soil disturbance will be kept to the minimum footprint necessary to complete the maintenance operation.
GEN-5	Mitten Crab Control Measure	Sediment from the San Francisco Bay Watershed, including that for reuse, cannot be moved to areas any farther south than Coyote Creek Golf Drive in south San Jose, and the intersection of McKean and Casa Loma Roads.
GEN-6	Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures	For activities occurring between January 15 and August 31, project areas will be checked by a qualified biologist or Designated Individuals for nesting birds within 2 weeks prior to starting work. If a lapse in project-related work of 2 weeks or longer occurs, another focused survey will be conducted before project work can be reinitiated. If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged.

Number	Title	Description
GEN-6.5	Protection of Nesting Least Bell's Vireos	To the extent feasible, SMP activities within those areas mapped as vireo habitat in the Santa Clara Valley Habitat Plan shall be scheduled to occur outside of the least Bell's vireo nesting season (March 15 – July 31). For activities within woody riparian habitat mapped as vireo habitat in the Santa Clara Valley Habitat Plan that will occur between March 15 and July 31, any work will be preceded by a focused survey for least Bell's vireos conducted by a qualified biologist who is familiar with the visual and auditory identification of this species. If an active nest is found, a minimum 250-foot no-activity buffer will be established around the nest. No work will occur within the buffer without verification by a biologist that the nest is inactive and until any fledged young are no longer dependent on adults for food.
GEN-7	Protection of Burrowing Owls	If occupied burrows are identified, a 250 foot radius no work buffer zone will be established around the burrow. The buffer may be modified, with CDFW approval, to take into consideration of paved roads, intervening riparian corridors and levees.
GEN-8	Protection of Sensitive Fauna Species from Herbicide Use	Approved herbicides and adjuvants may be applied in habitat areas for sensitive wildlife species; all applications will occur in accordance with federal and state regulations.
GEN-9	Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities	A qualified botanist will identify special status plant species and sensitive natural vegetation communities and clearly map or delineate them as needed in order to avoid and/or minimize disturbance, using the CDFW protocols and the *CNPS Botanical Survey Guidelines*.
GEN-10	Avoid Impacts to Bay Checkerspot Butterfly and Associated Critical Habitat	Areas supporting Bay checkerspot larval host plants will be identified by a qualified botanist and protected from disturbance to the extent feasible, by establishing buffer zones around individual plants or populations. Herbicides may be used in serpentine areas that do not contain Bay checkerspot butterfly larval host plants or sensitive plant species and habitat when approved by a qualified botanist.
GEN-11	Protection of Salt Marsh Harvest Mouse and California Clapper Rail	A District qualified biologist will conduct a desk audit to determine whether suitable Salt Marsh Harvest Mouse (SMHM) or California Clapper Rail (CCR) habitat is present in or adjacent to a maintenance activity. Within 7 days prior to work within the range of the SMHM or CCR, the proposed project area will be surveyed by a qualified biologist to identify specific habitat areas. To minimize or avoid the loss of individuals, activities within or adjacent to CCR and SMHM habitat will not occur within two hours before or after extreme high tides (6.5 feet or above) when the marsh plain is inundated, because protective cover for those species is limited and activities could prevent them from reaching available cover.

Number	Title	Description
GEN-12	Protection of Special-Status Amphibian and Reptile Species	A District qualified biologist will conduct a desk audit to determine whether suitable special-status amphibian or reptile habitat is present in or adjacent to a maintenance activity based on all available information including the habitats modeled in the Valley Habitat Plan. If the District Wildlife or Fisheries Biologist determines that a special-status amphibian or reptile could occur in the activity area, a qualified biologist will conduct one daytime and one nighttime survey within a 7 day period preceding the onset of maintenance activities.
GEN-13	Protection of Bat Colonies	A District Wildlife Biologist will conduct a desk audit to determine whether suitable habitat is present for bat colonies within 100 feet of the work site, staging areas, or access routes. If potential bat colony habitat is determined to be present, within two weeks prior to the onset of work activities a qualified biologist will conduct a survey to look for evidence of a bat use. If evidence is observed, or if potential roost sites are present in areas where evidence of bat use might not be detectable, an evening survey and/or nocturnal acoustic survey may be necessary to determine if the bat colony is active and to identify the specific location of the bat colony.
GEN-14	Protection of San Francisco Dusky-footed Woodrat	Prior to work within riparian, oak woodland, or coyote brush scrub habitat, or the removal of any oak trees outside these habitats, a District Wildlife Biologist will conduct a desk audit to determine whether woodrats could be present within suitable habitat for San Francisco dusky-footed woodrat or is known to be present in or adjacent to a maintenance activity site. If the District Wildlife Biologist determines that no San Francisco dusky-footed woodrat habitat is present, or there is habitat present but it will not be affected by the maintenance activity, then no further action is required. If the District Wildlife Biologist determines that suitable San Francisco dusky-footed woodrat habitat is present and may be affected by the maintenance activity, a qualified biologist shall conduct a pre-activity survey within 2 weeks prior to the start of work to determine if woodrat nests are present, or within 5 feet of, the immediate activity area.
GEN-15	Salvage Native Aquatic Vertebrates from Dewatered Channels	If fisheries or native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a fish and native aquatic vertebrate relocation plan shall be implemented to ensure that fish and native aquatic vertebrates are not stranded. Relocation efforts will be based on the District's Fish Relocation Guidelines. Streams that support a sensitive species will require a relocation effort and/ or initial onsite monitoring by a qualified biologist depending on seasonal conditions.
GEN-15.5	Avoidance of Impacts on the San Joaquin Kit Fox	A qualified District biologist will conduct a desk audit to determine whether an SMP activity will occur in an area where the San Joaquin kit fox could potentially occur, and in potential habitat for the species. If the District biologist determines that an SMP activity could occur in an area that could potentially support a kit fox, the SCVWD will implement applicable pre-activity surveys and other measures in accordance with the USFWS's *San Joaquin Kit Fox Survey Protocol for the Northern Rang*.

Number	Title	Description
		General Maintenance Practices
GEN-16	In-Channel Minor Activities	For in-channel minor work activities, work will be conducted from the top of the bank if access is available and there are flows in the channel.
GEN-17	Employee/Contractor Training	All appropriate District staff and contractors will receive annual training on Stream Maintenance Program BMPs. The training will also include an overview of special-status species identification and habitat requirements. District staff and contractors will receive fact sheets to assist with in-the-field identification of special-status species and their habitats.
GEN-18	Paperwork Required On-site	Copies of regulatory permits related to the Stream Maintenance Program will be kept on-site and available for review, if requested by regulatory personnel. Copies of the Stream Maintenance Program Manual and this BMP Manual will be kept on-site.
GEN-19	Work Site Housekeeping	District employees and contractors will maintain the work site in neat and orderly conditions on a daily basis, and will leave the site in a neat, clean, and orderly condition when work is complete.
GEN-20	Erosion and Sediment Control Measures	Soils exposed due to maintenance activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. Erosion control measures will be installed according to manufacturer's specifications. All temporary construction-related erosion control methods shall be removed at the completion of the project. Each maintenance site will be visually inspected at least once daily during extended storm events to confirm that BMPs are effective and maintained as necessary. Each maintenance site will be visually inspected within two business days (48 hours) after each significant rain event to determine whether BMPs were effective and identify the need to modify or maintain existing BMPs or include additional BMPs to be protective.

Number	Title	Description
GEN-21	Staging and Stockpiling of Materials	To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Building materials and other maintenance-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies or storm drains. Materials will not be stockpiled longer than seven (7) calendar days. No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited. Wet material removed from an isolated creek reach may be pulled to the side of the channel and allowed to naturally drain prior to removal from the channel. Pulled material will be removed from the channel prior to deactivation of the site or forecast of rain. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained silt fencing or other means of erosion control. During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers. All pipes, culverts, or similar structures stored at a site within sensitive species areas, for one or more overnight periods shall be securely capped prior to storage or inspected before the pipe is subsequently moved.
GEN-22	Sediment Transport	To prevent sediment-laden water from being released back into waterways during transport of spoils to disposal locations, truck beds will be lined with an impervious material (e.g., plastic), or the tailgate blocked with wattles, hay bales, or other appropriate filtration material. Trucks may then drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter, but only within the active project area of the creek where the sediment is being loaded into the trucks or within an identified vegetated area (swale) that is separated from the creek.
GEN-23	Stream Access	District personnel will use existing access ramps and roads to the extent feasible. If necessary to avoid large mature trees, native vegetation, or other significant habitat features, temporary access points will be constructed in a manner that minimizes impacts.

Number	Title	Description
GEN-24	On-Site Hazardous Materials Management	An inventory of all hazardous materials used at the worksite and the end products that are produced after their use will be maintained by the worksite manager. As appropriate, containers will be properly labeled with a "Hazardous Waste" label and hazardous waste will be properly recycled or disposed of off-site. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage. Quantities of toxic materials will be stored with secondary containment. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. Sanitation facilities will be placed outside of the creek channel and floodplain.
GEN-25	Existing Hazardous Materials	If hazardous materials, such as oil, batteries, or paint cans, are encountered at the maintenance sites, the District will carefully remove and dispose of them according to applicable regulatory requirements. District staff will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed at a hazardous waste facility.
GEN-26	Spill Prevention and Response	The District will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels following appropriate measures.
GEN-27	Existing Hazardous Sites	Upon selection of maintenance project locations, the District will conduct a search for existing known contaminated sites, as part of its annual preparation of the Notice of Proposed Work (NPW), on the State Water Resource Control Board's GeoTracker Web site. For any proposed ground disturbing maintenance sites located within 1,500 feet of any "open" sites where contamination has not been remediated, the District will contact the RWQCB case manager listed in the database. The District will work with the case manager to ensure maintenance activities would not affect cleanup or monitoring activities or threaten the public or environment.
GEN-28	Fire Prevention	All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site.
GEN-29	Dust Management	The District will implement the Bay Area Air Quality Management District's (BAAQMD) required Dust Control Measures.

Number	Title	Description
GEN-30	Vehicle and Equipment Maintenance	All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use. Incoming vehicles and equipment will be checked for leaking oil and fluids. Vehicles or equipment visibly leaking operational fluids will not be allowed on-site. No heavy equipment will operate in a live stream. No equipment servicing will be done in the creek channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location, and that can be performed without releasing any material into the floodway or water, will be conducted in the channel or floodplain. If necessary, all servicing of equipment done at the job site will be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills.
GEN-31	Vehicle Cleaning	Equipment will be cleaned of any visible sediment or vegetation clumps before transferring and using in a different watershed to avoid spreading pathogens or exotic/invasive species. Vehicle and equipment washing can occur on-site only as needed to prevent the spread of sediment, pathogens, or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including creek channels and storm drains, without being subjected to adequate filtration.
GEN-32	Vehicle and Equipment Fueling	No fueling will be done in the channel or immediate floodplain unless equipment stationed in these locations cannot be readily relocated. All off-site fueling sites will be equipped with secondary containment and avoid a direct connection to soil, surface water, or the storm drainage system. For stationary equipment that must be fueled on-site, secondary containment, such as a drain pan or drop cloth, will be used to prevent accidental spills of fuels from reaching the soil, surface water, or the storm drain system.
Dewatering		
GEN-33	Dewatering for Non-Tidal Sites	When sediment removal and bank stabilization work area includes a flowing stream, the entire streamflow will be diverted around the work area by construction of a temporary dam and/or bypass. Where appropriate, stream flow diversions will occur via gravity driven systems.
GEN-34	Dewatering in Tidal Work Areas	For tidal areas, a downstream cofferdam will be constructed to prevent the work area from being inundated by tidal flows.
GEN-35	Pump/Generator Operations and Maintenance	When needed to assist in channel dewatering, pumps and generators will be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.

Number	Title	Description
		Public Safety
GEN-36	Public Outreach	The public will be informed of stream maintenance work prior to the start of work as part of the preparation of the NPW for all projects in the NPW.
GEN-37	Implement Public Safety Measures	The District will implement appropriate public safety measures during maintenance.
GEN-38	Minimize Noise Disturbances to Residential Areas	The District will implement maintenance practices that minimize disturbances to residential areas surrounding work sites.
GEN-39	Planning for Pedestrians, Traffic Flow, and Safety Measures	Work will be staged and conducted in a manner that maintains two-way traffic flow on public roadways, bicycle and pedestrian facilities, public transit access and routes, adequate parking or designated public parking areas, and access to driveways and private roads in the vicinity of the work site. If temporary lane closures are necessary, they will be coordinated with the appropriate jurisdictional agency and scheduled to occur outside of peak traffic hours to the maximum extent practicable. Any lane closures will include advance warning signage, a detour route and flaggers in both directions.
		Cultural Resources
GEN-40	Discovery of Cultural Remains or Historic or Paleontological Artifacts	Work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met.
GEN-41	Review of Projects with Native Soil	A cultural resources specialist will conduct a review and evaluation of those sites that would involve disturbance / excavation of native soil previously undisturbed by contemporary human activities to determine their potential for affecting significant cultural resources.
		Utilities
GEN-42	Investigation of Utility Line Locations	An evaluation of the locations of utility lines that could be affected by maintenance activities will be conducted annually as part of the preparation of the Notice of Proposed Work (NPW). Utilities will be avoided as much as possible. For maintenance areas with the potential for adverse effects on utility services, appropriate measures shall be implemented.

Number	Title	Description
Sediment Removal BMPs		
SED-1	Groundwater Management	If high levels of groundwater are encountered during excavations in a work area, the water will be pumped out of the work site or left within the work area if the work activity is not causing water quality degradation in a live stream. Water Quality monitoring would need to occur.
SED-2	Prevent Scour Downstream of Sediment Removal	Sediment removal sites in the transport zone on alluvial fans may cause increased scour downstream if they experience scouring flows or rapid sediment accumulation after maintenance. After sediment removal, the channel will be graded so that the transition between the existing channel both upstream and downstream of the maintenance area is smooth and continuous between the maintained and non-maintained areas and does not present a sudden vertical transition (wall of sediment) or other blockage that could erode once flows are restored to the channel.
SED-3	Restore Channel Features	Low-flow channels within non-tidal streams will be contoured to facilitate fish passage and will emulate the pre-construction conditions as closely as possible, within the finished channel topography.
SED-4	Berm Bypass	Where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel will be wide enough to prevent introduction of turbid water from the cell into the live channel.
SED-5	Sediment Characterization	Projects involving sediment removal at stream gauges, outfalls, culverts, flap gates, tide gates, grade control structures, bridges, fish ladders, and fish screens in excess of 25 cubic yards shall be characterized in accordance with the SCVWD's Sediment Characterization Plans for SMP-2.
Vegetation Management BMPs		
VEG-1	Minimize Local Erosion Increase from In-channel Vegetation Removal	To minimize the potential effect of localized erosion, the toe of the bank will be protected by leaving vegetation to the maximum extent possible and consistent with the maintenance guidelines or original design requirements.
VEG-2	Non-native Invasive Plant Removal	Invasive species will be disposed of in a manner that will not contribute to the further spread of the species.
VEG-3	Use Appropriate Equipment for Instream Removal	When using heavy equipment to cut or remove instream vegetation, low ground pressure equipment, such as tracked wheels will be utilized to reduce impacts to the streambed.

Number	Title	Description
VEG-4	Use Flamers with Caution	A fire extinguisher, water supply and other appropriate fire suppression equipment will always be kept close to the work site in case of an emergency. Propane tanks will be checked for leaks and proper functioning prior to and proceeding use of flaming equipment. The propane tank will be treated as a hazardous material.
VEG-5	Conduct Flaming During Appropriate Weather and Seasonal Conditions	Flamers will not be used during periods of high fire danger or in areas where fuel or climate conditions could accidentally ignite a fire.
VEG-6	Standard Grazing Procedures	Vegetation and areas to be preserved will be fenced off to exclude grazing animals. Grazing animals will be excluded from stream channels, using fencing or other barriers.
Bank Stabilization BMPs		
BANK-1	Bank Stabilization Design to Prevent Erosion Downstream	To further prevent potential downstream erosion impacts due to bank stabilization, the site design will be adjusted to provide proactive protection of vulnerable areas within the reach of the worksite. Bank stabilization will include appropriate transition designs upstream and downstream of the work site to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Concrete that has not been cured is alkaline and can increase the pH of the water. Fresh concrete will be isolated until it no longer poses a threat to water quality using appropriate measures.
BANK-3	Bank Stabilization Post-Construction Maintenance	The District may maintain or repair bank stabilization projects that are less than 2 years old that are damaged by winter flows.
Post-Project Restoration BMPs		
REVEG-1	Seeding	Sites where maintenance activities result in exposed soil will be stabilized to prevent erosion. Disturbed areas shall be seeded with native seed as soon as is appropriate after maintenance activities are complete. An erosion control seed mix may be applied to exposed soils, and down to the ordinary high water mark (OHWM).
REVEG-2	Planting Material	Revegetation and replacement plantings will consist of locally collected native species. Species selection will be based on surveys of natural areas on the same creek that have a similar ecological setting and/or as appropriate for the site location.

2.5 INTENDED USES OF EIR

In addition to the District's use, the CEQA documentation for the Project will be used by agencies issuing permits, as well as other approvals and consultations for the Project. Specifically, information about the Project and the corresponding environmental analysis will be used by several agencies as part of their decision-making process regarding approvals applicable to the Project. A list of agencies and applicable permits, approvals, and consultations that may be required for the Project is provided in Table 2-5. For Project activities occurring outside of the District's ROW, local jurisdiction permitting requirements may apply and have been included in Table 2-2. Applicable agency permits required for the Project will be evaluated further in the EIR.

Table 2-5. Applicable Agency Permits, Approvals, and Consultations that May Be Required

Agency	Permit/ Approval/ Review
Federal	
U.S. Army Corps of Engineers	• Clean Water Act, Section 404 Permit • Environmental Review pursuant to NEPA
U.S. Fish and Wildlife Service	• Federal Endangered Species Act – Authorization under incidental take provisions of the Valley Habitat Plan
National Marine Fisheries Service	• Federal Endangered Species Act, Section 10 compliance • Environmental Review pursuant to NEPA
State Historic Preservation Officer	• National Historic Preservation Act, Section 106 compliance
State	
California Department of Fish and Wildlife	• Section 1601 of the California Department of Fish and Game Code - Streambed Alteration Agreement • California Endangered Species Act – Authorization under incidental take provisions of the Valley Habitat Plan
California State Water Resources Control Board	• Water Rights Amendments
San Francisco Bay Regional Water Quality Control Board	• Clean Water Act, Section 401 Water Quality Certification • National Pollutant Discharge Elimination System (NPDES) - General Construction Stormwater Permit • Waste Discharge Requirements
Local	
County of Santa Clara	• Approval from Parks and Recreation for access to parks and recreation facilities • Encroachment Permit • Grading Permit • Tree Removal Permit
City of Campbell	• Encroachment Permit • Tree Removal Permit
City of Cupertino	• Encroachment Permit • Streamside Permit • Tree Removal Permit

Agency	Permit/ Approval/ Review
City of Los Altos	• Encroachment Permit • Tree Removal Permit
City of Los Gatos	• Encroachment Permit • Grading Permit • Tree Removal Permit
City of Milpitas	• Building Permit • Grading and Drainage Permit • Heritage Tree Removal Request
City of Mountain View	• Development Review Permit • Heritage Tree Removal Permit
City of San Jose	• Encroachment Permit • Grading Permit • Tree Removal Permit
City of Santa Clara	• Encroachment Permit • Grading Permit • Heritage Tree Removal Permit
City of Sunnyvale	• Encroachment Permit • Tree Removal Permit

3 ENVIRONMENTAL CHECKLIST

3.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology /Soils
☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☒ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☒ Noise
☐ Population / Housing	☐ Public Services	☒ Recreation
☐ Transportation/Traffic	☒ Tribal Cultural Resources	☒ Utilities/Service Systems
☒ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

3.2 EVALUATION OF ENVIRONMENTAL IMPACTS

The degree of change from existing conditions caused by the Project is compared to the impact evaluation criteria to determine if the change is significant. Where it is determined that one or more significant impacts could result from implementation of the Project, mitigation measures would be developed to reduce or eliminate the significant impacts. Existing conditions serve as a baseline for evaluating the impacts of the Project.

The following terminology is used in this document to describe the various levels of environmental impacts associated with the Project:

- A finding of no impact is identified if the analysis concludes that the proposed Project would not affect a particular environmental topical area in any way.
- An impact is considered less than significant if the analysis concludes that the proposed Project would not cause a substantial adverse change in the environment.
- An impact would be considered to have potentially significant issues if the analysis concludes that the proposed Project could cause a significant environmental impact. Proposed Projects that potentially produce a significant impact(s) warrant the greater level of analysis and consideration provided by an EIR.

3.2.1 AESTHETICS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

The Project Area encompasses three watersheds in northern Santa Clara County: Coyote Creek, Guadalupe River, and Stevens Creek. Views to and from the Project Area vary due to the various individual project sites (i.e., sites where individual FHRP measures would be implemented) and length of the creeks proposed for construction activities. Depending upon the location of the viewer, views in the vicinity of the project sites may include portions of Project creeks, creek embankments, riparian corridors, oak woodlands, open space, recreational features, and adjacent roadways. No designated or eligible state scenic highways are located in the vicinity of the Project (California Department of Transportation [Caltrans], 2017). The Project Area is not designated as a scenic vista; however, the County considers creeks and stream sides to be important natural scenic resources (County of Santa Clara 1994).

As noted in Chapter 2, the Project includes various types of modifications proposed for District water supply operations and maintenance activities, as well as a range of infrastructure and stream enhancements intended to improve steelhead and Chinook salmon habitat in the Three Creeks. The measures are intended to provide instream flows and improve habitat conditions, and to meet the overall management objectives outlined in the FAHCE Settlement Agreement.

The Project would not significantly impact the aesthetic environment including scenic vistas or resources, the existing visual character, and/or result in new sources of light or glare. Because there are no scenic vistas/scenic highways within or adjacent to the Project Area, change in the visual setting would be small due to limitations in scale of the proposed modifications and enhancements, and the lack of permanent new lighting associated with the facilities the Project would mainly include upgrades to existing District-owned and maintained facilities. These changes would be confined to areas that have historically supported similar or the same infrastructure. However, access to individual project sites may require the use of lands under public or private ownership, such as County-owned park lands (see Section 3.2.15, Recreation, for additional detail).

DISCUSSION OF IMPACTS

a) Less-than-Significant Impact – A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Project Area creeks, as well as the lands adjacent to the creeks, may provide scenic views to people in the vicinity, but themselves do not include remarkable landscape

elements that create scenic vistas. In addition, the Project Area does not include areas designated as scenic vistas by the Caltrans Scenic Route Project or the Santa Clara County General Plan (County of Santa Clara 1994). Further, based on the low elevation of the Project Area relative to the surrounding topography and the amount and type of existing vegetation, views of the Project Area are largely limited to the immediate vicinity. Although there are no designated scenic vistas in the Project Area, the County considers creeks and stream sides to be important natural scenic resources, and thus the Project could temporarily affect scenic vistas during the construction period. However, the Project would not result in a permanent, substantial adverse effect on a scenic vista. Therefore, impacts would be less than significant with Project implementation.

b) Less-than-Significant Impact – The Project Area does not include any Officially Designated State Scenic Highways. Therefore, Project implementation would not impact scenic resources, trees, outcroppings, and historic buildings within a state scenic highway. Because there are no scenic highways in the Project Area, the Project would not damage scenic resources within a state scenic highway. Therefore, impacts would be less than significant with Project implementation.

c) Less-than-Significant Impact – Many of the project activities would occur within previously impacted areas. Alterations to the visual character of the Project Area during construction (i.e., presence of construction equipment and staging areas) would be isolated and temporary, but could be visible to users of recreational activities (i.e., fishing in Project Area creeks, bicycling or walking on trails in the vicinity of Project Area creeks, etc.). On completion of construction activities all equipment would be removed from the Project Area. Because construction activities would be temporary and short-term, and because views of the project sites would be limited, the Project would not degrade the existing visual character or quality of the site and its surroundings. Therefore, impacts would be less than significant with Project implementation.

d) No Impact – Project construction activities would be completed during daylight hours. The District does not propose nighttime construction except during emergency activities. Project implementation would not include installation of any new permanent sources of light or glare. Because no nighttime lighting would be required, and because no new sources of permanent light or glare are proposed, there would be no impact as a result of Project implementation.

3.2.2 AGRICULTURE AND FOREST RESOURCES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Project of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒

As noted in Chapter 2, the Project Area encompasses three watersheds in northern Santa Clara County: Coyote Creek, Guadalupe River, and Stevens Creek. Lands designated for agricultural use are mainly focused in the southern portion of the County, and in some cases are located near Project creeks, such as along Coyote Creek. However, there are no agricultural or forestry resources or lands zoned for agricultural use or Williamson Act contract located within the Project Area, as construction activities would be focused within the creek channels. While some areas of prime farmland exist along Coyote Creek, the majority of the Project Area is considered Urban and Built-up Land, and the individual sites within the Project Area are not designated by the California Farmland Mapping and Monitoring Program as prime, unique, or farmland of statewide importance (California Department of Conservation 2017).

The Project would not significantly impact agriculture and forest resources due to the lack of agricultural resources in the Project Area. The physical changes associated with the Project would not affect any areas currently used for agriculture or forest production.

DISCUSSION OF IMPACTS

a) No Impact – Some areas of prime farmland exist along Coyote Creek. However, Project implementation would not permanently impact areas outside of the creek channel, and would not preclude the continued use of adjacent properties for agricultural purposes. Temporary impacts may result from construction activities, such as staging materials and equipment, access requirements, and stream bank disturbance during gravel augmentation, barrier removals, and other stream improvements; construction easements for temporary impacts, if necessary, would be solicited from land owners with adjacent properties and all farmland would be returned to pre-construction conditions following implementation of measure. Because the Project would not convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use, no impact would occur with Project implementation.

b) No Impact – Some lands zoned for agriculture are located along Coyote Creek. However, Project implementation would not impact areas outside of the creek channel, and would not preclude the continued use of adjacent properties for agricultural purposes. Temporary impacts may result from construction activities, such as staging materials and equipment, access requirements, and stream bank disturbance during gravel augmentation, barrier removals, and other stream improvements; construction easements for temporary impacts, if necessary, would be solicited from land owners with adjacent properties and all farmland would be returned to pre-construction conditions following implementation of measure. Because the Project would not conflict with existing zoning for agricultural use or Williamson Act Contract, no impact would occur with Project implementation.

c) No Impact – No forest land, timberland, or timberland zoned Timberland Production are located within the Project Area. Because the Project would not conflict with existing zoning for or cause the rezoning of forest land or timberland, no impact would occur with Project implementation.

d) No Impact – As mentioned under c) above, no forest land is located within the Project Area. Because the Project would not result in the loss of forest land or the conversion of forest land to non-forest use, no impact would occur with Project implementation.

e) No Impact – Project implementation would not result in a conversion of farmland, forest land, or timberland uses, and would not preclude the continued use of adjacent properties for such uses. Because the Project would not involve other changes in the existing environment which could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use, no impact would occur with Project implementation. See responses to items a), b), c), and d) above for further detail.

3.2.3 AIR QUALITY

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) 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 that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

The Project is located within the Santa Clara Valley subregion of the Bay Area Air Quality Management District (BAAQMD). According to the BAAQMD, the Santa Clara Valley subregion has a high potential for air pollution, specifically for carbon monoxide, particulates, and photochemical precursors for ozone pollution. The BAAQMD region is designated nonattainment of the National Ambient Air Quality Standards (NAAQS) for ozone and fine particulate matter (PM2.5), and the California Ambient Air Quality Standards (CAAQS) for ozone, particulate matter (PM10), and fine particulate matter (PM2.5). The region is designated either attainment or unclassifiable for the remaining NAAQS and CAAQS (BAAQMD, 2018).

The BAAQMD CEQA Guidelines (BAAQMD 2017) establish thresholds of significance to assist in the review of projects under CEQA. The BAAQMD has established mass emission thresholds of significance (BAAQMD 2017) to determine if air emissions would contribute to an existing or projected air quality violation, result in a cumulatively considerable contribution to an existing air quality violation, or result in a cumulatively considerable net increase of a criteria pollutant such that the air basin would be in nonattainment for CAAQS or NAAQS. Although the BAAQMD established significance thresholds for construction- and operation-related emissions previously (BAAQMD 1999), the 2017 thresholds were selected for this analysis since the 1999 construction-related significance thresholds were primarily limited to PM_{10} emissions. The District considers the BAAQMD thresholds and the methodologies in its 2017 Air Quality CEQA Guidelines (updated May 2017) to be appropriate for use in this analysis because they are based on substantial evidence developed by the BAAQMD as the level to ensure attainment of air quality standards. The BAAQMD thresholds are presented in Table 3-1.

Table 3-1: Air Quality CEQA Thresholds of Significance

Pollutant	Construction-Related Thresholds	Operational-Related Thresholds	
Plan Level			
Criteria Air Pollutants and Precursors (Regional)	**Average Daily Emissions (lbs./day)**	**Average Daily Emissions (lbs./day)**	**Maximum Annual Emissions (tons/year)**
ROG	54	54	10
NOX	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
GHGs – Projects other than Stationary Sources	None	Compliance with Qualified GHG Reduction Strategy OR 1,100 MT of CO_2e/year OR 4.6 MT CO_2e/SP/year (residents+employees)	
GHGs –Stationary Sources	None	10,000 MT/year	

lbs.=pounds; ROG=reactive organic gases; NOX=nitrous oxides; PM=particulate matter; CO=carbon monoxide; GHG=greenhouse gases; CO2=carbon dioxide; MT=million tons.
Source: BAAQMD CEQA Air Quality Guidelines, May 2017.

Based on preliminary analysis, the Project would not result in any new permanent sources of air pollutant emissions. Construction activities at individual sites within the Project Area would result in short-term increases in emissions associated with the operation of construction equipment. The emissions associated with the construction activities would potentially exceed the BAAQMD significance thresholds after mitigation. Therefore, air quality impacts will be assessed in the EIR.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to air quality, applicable BMPs include the following, which are consistent with BAAQMD required measures:

- District BMPs – Air Quality
    - AQ-1: Use Dust Control Measures
    - AQ-2: Avoid Stockpiling Odorous Materials

- SMP BMPs – Air Quality
    - GEN-17: Employee/Contractor Training
    - GEN-18: Paperwork Required On-site
    - GEN-29: Dust Management

DISCUSSION OF IMPACTS

a) Potentially-Significant Impact – The BAAQMD prepared the 2017 Clean Air Plan (CAP) to address nonattainment in the San Francisco Bay Area Air Basin (SFBAAB) for both the 1- and 8-hour state ozone standards. The 2017 CAP details a control strategy to address ozone and ozone precursors (ROGs and NOx), particulate matter (primarily $PM_{2.5}$), air toxics, and greenhouse gases (GHGs). The proposed project would conflict with or obstruct the 2017 CAP if construction of the proposed project generates criteria pollutant that exceed numerical thresholds defined by BAAQMD to attain the goals and objectives of the 2017 CAP (see Table 3-1).

   Project construction activities have the potential to generate emissions from equipment used during construction, as well as generation of dust. Likely air pollutants from construction including the following: PM dust, criteria pollutants from fuel combustion, and diesel PM. Construction activities at individual sites within the Project Area could result in short-term increases in emissions associated with the operation of construction equipment that would potentially exceed the BAAQMD significance thresholds after mitigation. Because the Project could conflict with or obstruct implementation of the applicable air quality plan, impacts would be potentially significant.

b) Potentially-Significant Impact - As described above, project construction activities have the potential to generate temporary impacts to air quality resulting from emissions from equipment used during construction that would exceed the BAAQMD significance thresholds after mitigation. Long-term Project maintenance and operation would not contribute to violation of air quality standards. Operational impacts would be less than significant with Project implementation. Because the Project construction could violate any air quality standard or contribute substantially to an existing or projected air quality violation, impacts would be potentially significant.

c) Potentially-Significant Impact - As described above, project construction activities have the potential to generate temporary impacts to air quality resulting from emissions from equipment used during construction that would exceed the BAAQMD significance thresholds after mitigation. Therefore, there could be a cumulatively considerable net increase of the criteria pollutants that are in nonattainment status in the Basin and impacts would be potentially significant.

d) Less-than-Significant Impact – Sensitive receptors within or adjacent to the Project Area mainly include users of recreational activities (i.e., fishing in Project Area creeks, bicycling or walking on trails in the vicinity of Project Area creeks, etc.). However, construction activities for the Project would be temporary and short-term, and would be limited to relatively small areas. Because Project implementation would not expose sensitive receptors to substantial pollutant concentrations, impacts would be less than significant with Project implementation.

e) Less-than-Significant Impact – During construction of the proposed project, some odors may be present due to diesel-powered construction equipment. However, these odors would be temporary, limited to the construction period, and would not be substantial. Operation of the proposed project would not introduce any new sources of odor and would not result in objectionable odors in the long-term. Implementation of the proposed project would result in a less than significant impact, and no mitigation is required.

3.2.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	☒	☐	☐	☐
d) 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?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

As noted in Chapter 2, the Project Area encompasses three watersheds: Coyote Creek, Guadalupe River, and Stevens Creek. The scope of the Project addresses the water supply diversions, operations, and operational features that directly affect in-stream flows in each of these stream systems–below the first upstream diversion and above the tidal zone. The streams are identified as habitat for federal ESA-listed species, including the California Central Coast Steelhead (Threatened).

Based on preliminary analysis, the Project Area is known to support the following sensitive or special status species and/or habitats, including (CNDDB 2017; USFWS 2017):

- Central California Coast Steelhead
- Central Valley Fall-run Chinook Salmon
- Salmon Essential Fish Habitat
- Native Riverine Species, including Pacific lamprey (*Entosphenus tridentatus*), California roach (*Hesperoleucus symmetricus*), hitch (*Lavinia exilicauda*), Sacramento blackfish (*Orthodon microlepidotus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis*), and other native species
- Estuarine Species, Essential Fish Habitat, and Designated Critical Habitat
- Wetlands, Riparian Areas, and Other Waters
- Sensitive plant communities, including Coast Live Oak Woodland and Forest, Serpentine Bunchgrass, and Mixed Serpentine Chaparral
- Special-status plants, including Franciscan onion (*Allium peninsulare var. franciscanum*), Bent-flowered fiddleneck (*Amsinckia lunaris*), Anderson's Manzanita (*Arctostaphylos andersonii*), Brittlescale (*Atriplex depressa*), Round-leaved filaree (*California macrophylla*), Congdon's tarplant (*Centromadia parryi ssp. Congdonii*), Santa Clara red ribbons (*Clarkia concinna ssp. Automixa*), Hospital Canyon larkspur (*Delphinium californicum ssp. Interius*), Western leatherwood (*Dirca occidentalis*), Hoover's button-celery (*Eryngium aristulatum Jepson var. hooveri*), Satan's goldenbush (*Isocoma menziesii var. diabolica*), Showy golden madia (*Madia radiate*), Davidson's bush-mallow (*Malacothamnus davidsonii*), Hall's bush-mallow (*Malacothamnus hallii*), Loma Prieta hoita (*Hoita strobilina*), San Francisco collinsia (*Collinsia multicolor*), Oregon meconella (*Meconella oregano*), Mt. Diablo cottonweed (*Micropus amphiboles*), Robust monardella (*Monardella villosa ssp. globosa*), Hooked popcornflower (*Plagiobothrys uncinatus*), Saline clover (*Trifolium hydrophilum*)
- California tiger salamander (*Ambystoma californiense*)
- California red-legged frog (*Rana draytonii*)
- Foothill yellow-legged frog (*Rana boylii*)
- Western pond turtle (*Actinemys marmorata*)
- California horned lizard, non-special-status amphibians and reptiles, including western toad (*Anaxyrus boreas*), Sierran chorus frog (*Pseudacris sierra*), western fence lizard (*Sceloporus occidentalis*), California newt (*Taricha torosa*), western skink (*Plestiodon skiltonianus*), Pacific gopher snake (*Pituophis catenifer catenifer*), northern Pacific rattlesnake (*Crotalus oreganus*), western terrestrial garter snake (*Thamnophis elegans*), racer snakes, common kingsnake (*Lampropeltis getula*), and others
- Breeding special-status birds, including yellow warbler (*Setophaga petechial*), loggerhead shrike (*Lanius ludovicianus*), and white-tailed kite (*Elanus leucurus*)
- Tricolored blackbird (*Agelaius tricolor*)
- Golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*)
- Non-breeding special-status birds occurring as nonbreeding migrants, transients, or foragers
- Pallid bat (*Antrozous pallidus*) and other bat species

- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
- American badger (*Taxidea taxus*) and ringtail (*Bassariscus astutus*).

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to biological resources, applicable BMPs include the following:

- District BMPs - Biological Resources
    - BI-1 Avoid Relocating Mitten Crabs
    - BI-2 Minimize Impacts to Steelhead
    - BI-3 Remove Temporary Fills
    - BI-4 Minimize Adverse Effects of Pesticides on Non-target Species
    - BI-5 Avoid Impacts to Nesting Migratory Birds
    - BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction
    - BI-7 Minimize Impacts to Vegetation from Survey Work
    - BI-8 Choose Local Ecotypes Of Native Plants and Appropriate Erosion-Control
    - Seed Mixes
    - BI-9 Restore Riffle/Pool Configuration of Channel Bottom
    - BI-10 Avoid Animal Entry and Entrapment
    - BI-11 Minimize Predator-Attraction
- SMP BMPs – Biological Resources
    - GEN-1: In-Channel Work Window
    - GEN-2: Instream Herbicide Application Work Window
    - GEN-3: Avoid Exposing Soils with High Mercury Levels
    - GEN-4: Minimize the Area of Disturbance
    - GEN-5: Mitten Crab Control Measure
    - GEN-6: Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures
    - GEN-6.5: Protection of Nesting Leas Bell's Vireo
    - GEN-7: Protection of Burrowing Owls
    - GEN-8: Protection of Sensitive Fauna Species from Herbicide Use
    - GEN-9: Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities
    - GEN-10: Avoid Impacts to Bay Checkerspot Butterfly and Associated Critical Habitat
    - GEN-11: Protection of Salt Marsh Harvest Mouse and California Clapper Rail
    - GEN-12: Protection of Special-Status Amphibian and Reptile Species

- GEN-13: Protection of Bat Colonies
- GEN-14: Protection of San Francisco Dusky-footed Woodrat
- GEN-15: Salvage Native Vertebrates from Dewatered Channels
- GEN-15.5: Avoidance of Impacts on the San Joaquin Kit Fox
- GEN-16: In-channel Minor Activities
- GEN-17: Employee/Contractor Training
- GEN-18: Paperwork Required On-site
- GEN-19: Work Site Housekeeping
- GEN-20: Erosion and Sediment Control Measures
- GEN-21: Staging and Stockpiling of Materials
- GEN-23: Stream Access
- GEN-29: Dust Management
- GEN-30: Vehicle and Equipment Maintenance
- GEN-31: Vehicle Cleaning
- GEN-32: Vehicle and Equipment Fueling
- GEN-33: Dewatering for Non-tidal Sites
- GEN-34: Dewatering in Tidal Work Areas
- GEN-35: Pump/Generator Operations and Maintenance
- SED-3: Restore Channel Features
- SED-4: Berm Bypass
- SED-5: Sediment Characterization
- VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal
- VEG-2: Non-native Invasive Plant Removal
- VEG-3: Use Appropriate Equipment for Instream Removal of Invasive Species
- VEG-6: Standard Grazing Procedures
- BANK-1: Bank Stabilization Design to Prevent Erosion Downstream
- BANK-2: Concrete Use Near Waterways
- BANK-3: Bank Stabilization Post-construction Maintenance
- REVEG-1: Seeding
- REVEG-2: Planting Material

As noted in Chapter 2, avoidance and minimization measures from the Santa Clara VHP Conditions (http://scv-habitatagency.org/178/Santa-Clara-Valley-Habitat-Plan) would also be applied to the Project, as outlined below. The VHP Conditions applicable to the Project are summarized in Chapter 2 and full descriptions from the VHP are in Appendix C.

- Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species
- Condition 2. Incorporate Urban-Reserve System Interface Design Requirements

- Condition 3. Maintain Hydrologic Conditions and Protect Water Quality
- Condition 4. Avoidance and Minimization for In-Stream Projects
- Condition 5. Avoidance and Minimization Measures for In-Stream Operations and Maintenance
- Condition 6. Design and Construction Requirements for Covered Transportation Projects
- Condition 7. Rural Development
- Condition 8. Avoidance and Minimization Measures for Rural Road Maintenance
- Condition 9. Prepare and Implement a Recreation Plan
- Condition 10. Fuel Buffer
- Condition 11. Stream and Riparian Setbacks
- Condition 12. Wetland and Pond Avoidance and Minimization
- Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization
- Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization
- Condition 15. Western Burrowing Owl
- Condition 16. Least Bell's Vireo
- Condition 17. Tricolored Blackbird
- Condition 18. San Joaquin Kit Fox
- Condition 19. Plant Salvage when Impacts are Unavoidable
- Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences

DISCUSSION OF IMPACTS

a, b, c) Potentially Significant Impact – Construction activities associated with the Project could adversely affect special-status species, riparian habitats or other sensitive natural communities, or federally protected wetlands, including through temporary or permanent loss as a result of Project activities, such as grading, excavation, fill, and hydrological interruption activities. Project activities that occur in close proximity to occupied special-status species habitats (e.g., occupied nests, roosts, or burrows) could indirectly disturb individuals resulting in abandonment of those habitats. If populations of these species and suitable habitat are limited locally and regionally, these impacts would be potentially significant. The EIR will further evaluate the magnitude of Project impacts on special-status species, riparian habitats, sensitive natural communities, and federally and/or state protected wetlands. This evaluation will be based on Project design and construction details to be developed by the District during the EIR process and incorporated into the Project description. Measures to avoid, minimize, and/or compensate for impacts would be implemented by the Project in conformance with District standard BMPs, the VHP, and any required permit conditions. Any potential beneficial effects that could occur as a result of implementation of the Project will also be discussed in the EIR.

d) Potentially Significant Impact - The construction of the Project could temporarily disrupt the movement of fish species in Project Area creeks. Further, a sudden localized increase in turbidity could affect normal behaviors that are essential to growth and survival such as feeding, sheltering, and migrating. Within the Project Area, natural habitats and streams may function as pathways for terrestrial wildlife movement that allow animals to move along these areas. Measures to avoid, minimize, and/or compensate for impacts would be implemented by the Project in conformance with District standard BMPs, the

VHP, and any required permit conditions. However, because project activities would temporarily impact wildlife movement in these areas, this impact is considered potentially significant. Once construction activities are complete, wildlife movement conditions would be similar to pre-existing conditions. The EIR will further evaluate the magnitude of impacts of construction activities on the movement of native wildlife species or with established wildlife corridors. This evaluation will be based on Project design and construction details and consideration of the various types of species that currently move through and use the Project Area.

e) Potentially Significant Impact – Trees protected by local ordinances (Ordinance trees) are defined based on the applicable local ordinance (e.g., Cities of Mountain View, Sunnyvale, Cupertino, Los Gatos, Campbell, San Jose, Santa Clara, and Milpitas ordinances, County of Santa Clara Tree Preservation and Removal Ordinance, etc.),. Often, ordinance trees must meet a minimum size requirement. Ordinance-sized trees occur in the Project Area (e.g., oak woodlands) and within the riparian habitats along Project creeks where tree removal may be necessary. Measures to avoid, minimize, and/or compensate for impacts would be implemented by the Project in conformance with District standard BMPs, the VHP, and local tree ordinances as applicable. However, because Project activities could result in the permanent loss of ordinance-sized trees, this impact is considered potentially significant. The EIR will further evaluate this impact and an analysis of the potential for construction activities to impact ordinance-sized trees based on Project design and construction details would be developed during the EIR process.

f) Less-than-Significant Impact - As noted in Chapter 2, the Project includes various types of modifications proposed for District water supply operations and maintenance activities, as well as a range of infrastructure and stream enhancements intended to improve steelhead and Chinook salmon habitat in the Three Creeks. The VHP provides coverage for the Project's take of listed species and would provide the federal and state Endangered Species Act compliance pathway for many of the Project activities for species under the jurisdiction of USFWS and CDFW. Measures to avoid, minimize, and/or compensate for impacts would be implemented by the Project in conformance with District standard BMPs, the VHP, and local tree ordinances as applicable. Because the Project would adhere to the general conditions of the VHP, impacts would be less than significant with Project implementation.

3.2.5 CULTURAL RESOURCES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☒	☐	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☒	☐	☐	☐

The physical changes associated with the Project would mainly include upgrades to existing District-owned and maintained lands and facilities. To the extent feasible, these changes would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure. However, access to individual project sites may require the use of previously undisturbed lands or lands under public or private ownership, such as County-owned park lands (see Section 3.2.15, Recreation, for additional detail). However, the potential exists for previously unidentified cultural resources to be discovered during Project implementation.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to cultural resources, applicable BMPs include the following:

- District BMPs - Cultural Resources
    - CU-1: Accidental Discovery of Archaeological Artifacts or Burial Finds
- SMP BMPs - Cultural Resources
    - GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts
    - GEN-41: Review of Projects with Native Soil

DISCUSSION OF IMPACTS

a) Potentially Significant Impact - As noted above, to the extent feasible, the physical changes associated with the Project would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure. However, access to individual project sites may require the use of previously undisturbed lands or lands under public or private ownership, and as such, areas that would be affected by Project construction could support previously unidentified historical resources. The District would incorporate standard BMPs, and would comply with all applicable laws regarding discovery of previously unrecorded resources. However, the potential remains for

previously unidentified historical resources to be discovered during ground disturbing activities, which would be a potentially significant impact. Impacts on historical resources will be evaluated further in the EIR.

b) Potentially Significant Impact - Areas that would be affected by Project construction could support previously unidentified archaeological resources. The District would incorporate standard BMPs, and would comply with all applicable laws regarding discovery of previously unrecorded resources. However, the potential remains for previously unidentified archaeological resources to be discovered during ground disturbing activities, which would be a potentially significant impact. Impacts on archaeological resources will be evaluated further in the EIR.

c) Potentially Significant Impact - Areas that would be affected by Project construction could support previously unidentified paleontological resources. The District would incorporate standard BMPs, and would comply with all applicable laws regarding discovery of previously unrecorded resources. However, the potential remains for previously unidentified paleontological resources to be discovered during ground disturbing activities, which would be a potentially significant impact. Impacts on paleontological resources will be evaluated further in the EIR.

d) Potentially Significant Impact - Areas that would be affected by construction of Project features would likely not support known or recorded historic or prehistoric resources. Therefore, the Project is not likely to disturb any human remains. The District would incorporate standard BMPs, and would comply with all applicable laws regarding discovery of previously unrecorded resources, including human remains. However, the potential remains for previously unidentified human remains to be discovered during ground disturbing activities, which would be a potentially significant impact. Impacts on human remains will be evaluated further in the EIR.

3.2.6 GEOLOGY AND SOILS

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) 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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

The Project Area is located in Santa Clara Valley, which is part of the San Andreas Fault System. This system consists of a complex system of primarily northwest-trending, right lateral, strike-slip faults that include the San Andreas, Hayward, and Calaveras faults. Based on the extensive reach of the Project Area watersheds throughout the County, a wide range of soil types and characteristics are present in the Project Area.

The physical changes associated with the Project would mainly include upgrades to existing District-owned and maintained facilities. To the extent feasible, these changes would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure. However, access to individual project sites may require the use of lands

under public or private ownership, such as County-owned park lands, and as such, may require the removal of topsoil in undisturbed areas.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to geology and soils, applicable BMPs include the following:

- District BMPs – Geology and Soils
    - WQ-4: Limit Impacts From Staging and Stockpiling Materials
    - WQ-9: Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
    - WQ-10: Prevent Scour Downstream of Sediment Removal
- SMP BMPs – Geology and Soils
    - GEN-20: Erosion and Sediment Control Measures
    - SED-2: Prevent Scour Downstream of Sediment Removal
    - SED-5: Sediment Characterization
    - VEG-1: Minimize Local Erosion Increase from In-channel Vegetation Removal
    - BANK-1: Bank Stabilization Design to Prevent Erosion Downstream
    - BANK-3: Bank Stabilization Post-construction Maintenance
    - REVEG-1: Seeding

DISCUSSION OF IMPACTS

a) No Impact - The Project would not affect the distribution of people living or working in the Project Area. Therefore, it would not include substantial ground movement that might create a seismic risk, increase the risk of landslides, or change existing geologic risks for people and property. Because the Project would not change the exposure of people to potential substantial adverse effects associated with rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides, no impact would occur with Project implementation.

b) Potentially Significant Impact - Construction activities would have the potential to contribute to accelerated erosion. During construction, clearing, grubbing, and grading activities would remove ground cover, and expose and disturb soil on slopes. Exposed and disturbed soil would be vulnerable to erosion from runoff during construction, with soil particles becoming entrained in the runoff. Altered drainage patterns as a result of construction could also cause redirection and concentration of runoff, potentially further exacerbating erosion. However, the District routinely implements extensive erosion and sediment control BMPs. Exposed soils within the work area would be stabilized following the completion of earthmoving activities. Erosion control BMPs would be implemented consistent with District requirements. A Stormwater Pollution Prevention Plan (SWPPP) would also be required, providing an additional regulatory mechanism to instill effective erosion control during construction. As noted above, to the extent feasible, the physical changes associated with the Project would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure. However, access to individual project sites may require the use of previously undisturbed lands or lands under public or private ownership, and as such, may require the removal of topsoil in undisturbed areas, and the potential for removal of topsoil in undisturbed areas would

be considered potentially significant. The EIR will further evaluate the magnitude of this impact. This evaluation will be based on Project design and construction details to be developed by the District and incorporated into the Project description.

c) No Impact - None of the geologic units or soils that support the District's existing facilities would become unstable as a result of the Project. Construction activities for the Project would be temporary and short-term, and would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Because Project activities would not be located on a geologic unit or soil that is unstable, no impact would occur with Project implementation

d) No Impact - No structures for human occupancy would be constructed as part of the Project. Because no new risks to life or property would be created, the Project would have no effect related to expansive or unstable soils. Therefore, no impact would occur with Project implementation.

e) No Impact - Soils in the Project Area are adequate to support the Project and associated equipment. Because no alternative wastewater disposal systems are included as part of the Project, no impact would occur with Project implementation.

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3.2.7 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Climate change results from the accumulation in the atmosphere of greenhouse gas emissions (GHGs) produced primarily by the burning of fossil fuels for energy. These man-made GHG emissions are widely accepted in the scientific community as contributing to global warming. Because GHGs (CO2, methane, and nitrous oxide) persist and mix in the atmosphere, emissions anywhere in the world affect the climate everywhere in the world. Consequently, GHG emissions that contribute to climate change result in a worldwide cumulative impact (global warming) rather than a local or regional project-specific impact typically associated with criteria pollutants. Impacts related to GHG emissions are discussed in the context of the Project's contribution to statewide and global GHG emissions.

The California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) established a comprehensive program of regulatory and market mechanisms to achieve reductions in GHGs that are quantifiable, real, and cost-effective. The Act directs responsibility for monitoring and reducing GHG emissions to the Air Resources Board (ARB). Among the most significant components of the Act is the requirement to reduce carbon emissions in California to 1990 levels by 2020.

Senate Bill (SB) 32, enacted in 2016, sets a statewide target of reducing GHG emissions 40% below 1990 levels by 2030. ARB is preparing a 2030 Scoping Pan showing how the state can achieve this target.

As discussed in Section 3.2.3, the District considers the BAAQMD thresholds and the methodologies in its 2017 Air Quality CEQA Guidelines (updated May 2017) to be appropriate for use in this analysis because they are based on substantial evidence developed by the BAAQMD. The BAAQMD thresholds are presented in Table 3-1. As shown, the BAAQMD has not proposed GHG thresholds for construction emissions. As the Project is not a stationary source of emissions, the BAAQMD GHG threshold for non-stationary sources of 1,100 MT CO_2e per year is used for this assessment.

Based on preliminary analysis, the Project would not result in any new permanent sources of GHG emissions. Construction activities at individual sites within the Project Area would result in short-term increases in emissions associated with the operation of construction equipment. When amortized over a 30 year period, and added to the minimal operational emissions associated with routine maintenance, the Project's construction emissions could potentially exceed the BAAQMD's 1,100 MT CO_2e threshold. Therefore, greenhouse gas emissions will be assessed in the EIR.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to GHG emissions, applicable BMPs include the following, which are consistent with BAAQMD required measures:

- District BMPs – Greenhouse Gas Emissions
    - GEN-30: Vehicle and Equipment Maintenance
    - GEN-32: Vehicle and Equipment Fueling
    - GEN-35: Pump/Generator Operations and Maintenance
- SMP BMPs – Greenhouse Gas Emissions
    - GEN-18: Paperwork Required On-site
    - GEN-30: Vehicle and Equipment Maintenance

DISCUSSION OF IMPACTS

a) Potentially-Significant Impact - The Project would generate temporary construction-related GHG emissions, with most of the emissions generated by off-road construction equipment, materials hauling, and daily construction worker trips. The long-term operation of the Project would not differ substantially from existing conditions, and as such would not generate substantial new or altered sources of GHGs emissions. Further, periodic maintenance activities would be incorporated into existing District maintenance schedules and would, therefore, result in a negligible change to vehicle miles traveled and GHG emissions. When amortized over a 30 year period, and added to the minimal operational emissions associated with routine maintenance, the Project's construction emissions could potentially exceed the BAAQMD's 1,100 MT CO_2e threshold. Therefore, GHG impacts would be potentially significant.

b) Potentially-Significant Impact – As discussed in Response (a), the proposed project's short-term construction and long-term operational GHG emissions would be potentially significant. Therefore, the proposed project would potentially conflict with the State's GHG reduction goals established by AB 32, SB 32, and Executive Order S-3-05.

3.2.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) 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?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) 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?	☐	☐	☐	☒

The Project Area is located on land owned either by the District, County of Santa Clara, or private parties. Based on the extensive reach of the Project Area watersheds throughout the County, the Project Area is characterized by a wide range of surrounding land uses, which include residential and recreational land uses.

According to Cal/EPA, the provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (California Environmental Protection Agency, 2018). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with CEQA. The Cortese list, which includes the sites listed below, was reviewed for references to the Project Area:

- List of Hazardous Waste and Substances sites from the Department of Toxic Substances Control (DTSC) EnviroStor database;
- List of Leaking Underground Storage Tank Sites from the SWRCB GeoTracker database;
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from SWRCB; and
- List of hazardous waste facilities subject to corrective action identified by DTSC.

None of the areas that would be subject to construction activity are known to contain hazardous materials or are on the Cortese list. However, in some cases, the individual sites within the Project Area would be located adjacent to or in the vicinity of listed hazardous materials sites.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to hazards and hazardous materials, applicable BMPs include the following:

- District BMPs - Hazards & Hazardous Materials
    - HM-1 Comply with All Pesticide Application Restrictions and Policies
    - HM-2 Minimize Use of Pesticides
    - HM-3 Post Areas Where Pesticides Will Be Used
    - HM-4 Comply with All Pesticide Usage Requirements
    - HM-5 Comply with Restrictions on Herbicide Use in Upland Areas
    - HM-6 Comply with Restrictions on Herbicide Use in Aquatic Areas
    - HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations
    - HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance
    - HM-9 Ensure Proper Hazardous Materials Management
    - HM-10 Utilize Spill Prevention Measures
    - HM-11 Ensure Worker Safety in Areas with High Mercury Levels
    - HM-12 Incorporate Fire Prevention Measures
    - HM-13 Avoid Impacts from Naturally Occurring Asbestos
    - WQ-4 Limit Impacts From Staging and Stockpiling Materials
    - WQ-5 Stabilize Construction Entrances and Exits
    - WQ-11 Maintain Clean Conditions at Work Sites
    - WQ-12 Manage Well or Exploratory Boring Materials

- WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings
- WQ-14 Backfill Completed Exploratory Borings
- WQ-15 Prevent Water Pollution
- WQ-16 Prevent Stormwater Pollution
- WQ-17 Manage Sanitary and Septic Waste
- TR-1 Use Suitable Public Safety Measures

- SMP BMPs
  - GEN-18: Paperwork Required On-site
  - GEN-24: On-site Hazardous Materials Management
  - GEN-25: Existing Hazardous Materials
  - GEN-26: Spill Prevention and Response
  - GEN-27: Existing Hazardous Sites
  - GEN-30: Vehicle and Equipment Maintenance
  - GEN-31: Vehicle Cleaning
  - GEN-32: Vehicle and Equipment Fueling
  - GEN-35: Pump/Generator Operations and Maintenance
  - GEN-37: Implement Public Safety Measures

DISCUSSION OF IMPACTS

a, b) Less-than-Significant Impact – Implementation of the Project would potentially require the routine transfer, use, storage, or disposal of hazardous materials. During construction, hazardous materials typically associated with proposed construction activities, such as fuel, oil, explosives and lubricants would be employed in the project and staging areas. The District would comply with all relevant federal, state, and local statutes and regulations related to transport, use, storage, or disposal of hazardous materials, and all materials designated for disposal would be evaluated for appropriate State and Federal hazardous waste criteria. Construction activities would also incorporate district standard BMPs. These measures would minimize the potential release of hazardous materials into Project Area wetlands/waterways resulting from the routine use, storage, or disposal of hazardous materials. Because the Project would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the transport, use, storage, disposal, or release of hazardous materials into the environment, impacts would be less than significant with Project implementation.

c) No impact – The individual project sites within the Project Area are not located within a ¼ mile of an existing or proposed school. Because the Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school, no impact would occur with Project implementation.

d) Less-than-Significant Impact – As described above, the Cortese List was reviewed for references to the Project Area. While the Project Area creeks are not included on a list of hazardous materials sites complied pursuant to government Code Section 65962.5, the individual sites within the Project Area may be located adjacent to or in the vicinity of

listed sites. Construction activities would incorporate district standard BMPs. These measures would minimize the potential to create a significant hazard to the public or the environment resulting from existing hazardous materials and/or sites. Because the Project would not create a hazard to the public or the environment as a result of a hazardous materials site, impacts would be less than significant with Project implementation

e, f) No impact – The individual project sites within the Project Area are not located within an airport land use plan or within 2 miles of a public, public use, or private airport. Because the Project would not result in a safety hazard for people residing or working in the project area, no impact would occur with Project implementation.

g) No impact – The District would comply with all adopted emergency response plans, and other measures as required by the County during construction activities to ensure that appropriate safety measures are in place in the event of an emergency. Because the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, no impact would occur with Project implementation.

h) No Impact – Wildlands in the Project Area could catch fire if an errant spark or heat from construction equipment were to provide ignition. However, this risk would be limited to construction of the Project. During construction, the District would adhere to all fire prevention and protection requirements and regulations of the County and Public Resources Code measures for wildland fire safety, as applicable. The District would also implement standard fire prevention BMPs. Because the Project would not expose people or property to increased wildfire risk, no impact would occur with Project implementation.

3.2.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☒	☐	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

The Project Area encompasses three watersheds in northern Santa Clara County: Coyote Creek, Guadalupe River, and Stevens Creek. District operations in the three watersheds include the following:

- Coyote Creek – the District operates Anderson and Coyote Reservoirs in the upper watershed at the origin of Coyote Creek, and in-stream recharge facilities on the Coyote main stem and Upper Penitencia Creek, a tributary to Coyote Creek.
- Guadalupe River – the District operates Lexington, Guadalupe, Almaden and Calero Reservoirs on Los Gatos, Guadalupe, Alamitos, and Calero Creeks, respectively; and in-stream recharge facilities on Los Gatos Creek (Vasona, Kirk, and Camden recharge ponds); Guadalupe Creek (Masson/ Los Capitancillos ponds), Alamitos Creek (Alamitos Flashboard Dam and Alamitos/Guadalupe ponds).
- Stevens Creek – the District operates Stevens Creek Reservoir and water supply facilities in Stevens Creek.

As noted in Chapter 2, the Project includes various types of modifications proposed for District water supply operations and maintenance activities, as well as a range of infrastructure and stream enhancements intended to improve steelhead and Chinook salmon habitat in the Three Creeks. The measures are intended to provide instream flows and improve habitat conditions, and to meet the overall management objectives outlined in the FAHCE Settlement Agreement.

Based on preliminary analysis, the Project would result in altered drainage patterns and increased surface runoff and flooding. Changes in the magnitude and pattern of instream flows resulting from Project implementation could also alter the timing of water diverted to groundwater percolation ponds. As a result, the Project could alter the timing and volume of water delivered to municipal, industrial, and agricultural users. Project implementation could also result in temporary effects on water quality and increase erosion and siltation due to the altered drainage patterns.

Water quality is regulated under the federal CWA and California Porter-Cologne Water Quality Control Act. Under these statutes, beneficial uses have been established by the San Francisco Bay RWQCB for Project Area waterways. Refer to Chapter 2 Project description for further detail.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to hydrology and water quality, applicable BMPs include the following:

- District BMPs - Hydrology/Water Quality
    - WQ-1 Conduct Work from Top of Bank
    - WQ-2 Evaluate Use of Wheel and Track Mounted Vehicles in Stream Bottoms
    - WQ-3 Limit Impact of Pump and Generator Operation and Maintenance
    - WQ-4 Limit Impacts From Staging and Stockpiling Materials
    - WQ-5 Stabilize Construction Entrances and Exits
    - WQ-6 Limit Impact of Concrete Near Waterways
    - WQ-7 Isolate Work in Tidal Areas With Use of Coffer Dam
    - WQ-8 Minimize Hardscape in Bank Protection Design

- WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement
- WQ-10 Prevent Scour Downstream of Sediment Removal
- WQ-11 Maintain Clean Conditions at Work Sites
- WQ-12 Manage Well or Exploratory Boring Materials
- WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings
- WQ-14 Backfill Completed Exploratory Borings
- WQ-15 Prevent Water Pollution
- WQ-16 Prevent Stormwater Pollution
- WQ-17 Manage Sanitary and Septic Waste

- SMP BMPs - Hydrology/Water Quality
  - GEN-1: In-channel Work Window
  - GEN-2: Instream Herbicide Application Work Window
  - GEN-3: Avoid Exposing Soils with High Mercury Levels
  - GEN-20: Erosion and Sediment Control Measures
  - GEN-21: Staging and Stockpiling of Materials
  - GEN-22: Sediment Transport
  - GEN-24: On-site Hazardous Materials Management
  - GEN-26: Spill Prevention and Response
  - GEN-30: Vehicle and Equipment Maintenance
  - GEN-31: Vehicle Cleaning
  - GEN-32: Vehicle and Equipment Fueling
  - GEN-35: Pump/Generator Operations and Maintenance
  - SED-1: Groundwater Management
  - SED-2: Prevent Scour Downstream of Sediment Removal
  - BANK-1: Bank Stabilization Design to Prevent Erosion Downstream
  - BANK-2: Concrete Use Near Waterways
  - BANK-3: Bank Stabilization Post-construction Maintenance

DISCUSSION OF IMPACTS

a, f) Potentially Significant Impact - Construction activities associated with the Project have the potential to degrade water quality in a manner that could exceed federal and/or state water quality standards and/or otherwise substantially degrade water quality. To address temporary impacts the District would incorporate BMPs into project design. A SWPPP would also be required, providing an additional regulatory mechanism to ensure adverse effects to water quality are minimized to the maximum extent practicable during construction. Potential water quality degradation from construction of the Project will be evaluated further in the EIR. Measures will be identified in the EIR to potentially reduce the level of significance of this impact.

b) Potentially Significant Impact – As noted above, changes in the magnitude and pattern of instream flows resulting from Project implementation could also alter the timing of water diverted to groundwater percolation ponds, resulting in a potentially significant impact on groundwater supplies and/or recharge. As a result, the Project could alter the timing and volume of water delivered to municipal, industrial, and agricultural users. Potential impacts on groundwater supply as a result of Project implementation will be evaluated further in the EIR.

c) Potentially Significant Impact – As noted above, construction activities associated with the Project have the potential to alter the existing drainage patterns in the Project Area, such that indirect erosion or siltation could occur. This impact would be potentially significant, and will be evaluated further in the EIR.

d, e, f) Less-than-Significant Impact – As noted above, the Project would result in altered drainage patterns and increased surface runoff and flooding. However, runoff from individual projects would not substantially increase the total impervious areas in the Project Area compared to existing conditions. No new sources of polluted runoff would be created by the Project. After Project implementation, runoff from the Project Area would not substantially increase such the local stormwater drainage system would be exceeded. Impacts would be less than significant with Project implementation.

g) No Impact – The Project would not involve placement of housing within a flood hazard area. Therefore, no impact would occur with Project implementation.

h) Less-than-Significant Impact – The Project is intended to implement actions that would help manage flows and improve fish passage within the District area and its watersheds. Spawning and rearing habitat enhancement measures could include different combinations of placement of gravel and/or large organic debris, channel modification, possibly including berms, and riparian canopy enhancement; however, actions would require implementation consistent with District Act guidance to

   "Provide for the control and conservation of flood and storm waters and the protection of watercourses, watersheds, public highways, life and property from damage or destruction from such waters" (http://www.valleywater.org/About/DistrictAct.aspx)

   Therefore, impacts related to placement of structures that could impede or redirect flow would be less-than-significant.

i) Less-than-Significant Impact – The Project would not expose people or structures to a risk of loss, injury, or death from flooding. Water storage at the reservoirs would not be increased as a result of Project implementation and application of rule curves or other measures do not require physical changes to existing dams or related facilities. Therefore, impacts would be less than significant with Project implementation.

j) No Impact - The potential for damage caused by tsunamis is considered low given that the Project Area is not directly exposed to the open ocean. Seiches would be limited to the larger water bodies, such as reservoirs. Implementation of Project measures would not induce flooding beyond existing high water levels in streambeds, so no new areas with soils susceptible to landslides or increased mudflow would be wetted. Temporary impacts to adjacent habitat could occur during construction periods; however, the area impacted would be returned to pre-existing conditions following construction and District BMPs would be applied (Section 2.4) to minimize affects during implementation. Therefore, no impact would occur with Project implementation.

3.2.10 LAND USE AND PLANNING

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy or regulation 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?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

The Project Area is located on land owned either by the District, County of Santa Clara, or private parties. Based on the extensive reach of the Project Area watersheds throughout the County, the Project Area is characterized by a wide range of surrounding land uses, which include residential and recreational land uses. Based on preliminary analysis, the proposed changes would not affect other types of land uses near and downstream of the affected resources.

DISCUSSION OF IMPACTS

a) No Impact – The Project would not create a new barrier between various portions of the Project Area. Because the Project would not result in the physical division of a community, no impact would occur with Project implementation.

b) Less-than-Significant Impact – Temporary changes in access to recreational land uses could occur during project construction. Impacts on recreational use are discussed in Section 3.2.15, Recreation. The Project would comply with all applicable land use plans, policies, and regulations. Because the Project would not conflict with any applicable land use plan, policy, or regulation, impacts would be less than significant with Project implementation.

c) Less-than-Significant Impact – The Project would be implemented in an area covered by, but would not conflict with implementation of, an existing habitat conservation plan. The Project would comply with the conditions of the VHP, as discussed in further detail in section 3.2.4 Biological Resources. Because the Project would not conflict with applicable habitat conservation plan or natural community conservation plans, impacts would be less than significant with Project implementation.

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3.2.11 MINERAL RESOURCES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Many mineral resource deposits in Santa Clara County are of regional or state-wide significance, as determined by state agencies. Mineral resources of regional or state-wide significance found and extracted in Santa Clara County include construction aggregate (crushed stone, sands, and gravels), deposits of limestone, and, to a lesser extent, salts derived from evaporation ponds at the edge of San Francisco Bay. These resources are not known to occur in the Project Area. The California Geological Survey Guidelines for Classification and Designation of Mineral Lands contains guidelines for classification and designation of mineral lands for determining suitability as Aggregate Resources Areas. Based on preliminary analysis, the Project would not affect the availability of known mineral resources and would not result in the loss of any designated, locally important mineral resource recovery sites.

DISCUSSION OF IMPACTS

a) No Impact – The Project Area does not include areas that are designated as mineral resource zones (MRZs), and are not shown in the applicable City or County General Plans as areas of mineral resources to be protected from further development. Because implementation of the Project would not result in the loss of mineral resources, no impact would occur with Project implementation.

b) No Impact - The Project Area is not located in an area delineated as a locally important mineral resource recovery site. Because the Project would not result in the loss of availability of a locally important mineral resource recovery site, no impact would occur with Project implementation.

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3.2.12 NOISE

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The Project Area is located on land owned either by the District, County of Santa Clara, or private parties. Based on the extensive reach of the Project Area watersheds throughout the County, the Project Area is characterized by a wide range of surrounding land uses, which include residential and recreational land uses.

The Project would not result in any new permanent sources of noise and vibration. Construction activity at individual sites within the Project Area would result in short-term increases in noise associated with the operation of construction equipment. Construction activity would be temporary and short-term, and would generally be confined to small areas. People traveling through or near the project sites might hear construction activity, and implementation of BMPs would help limit people's exposure to noise. However, implementation of proposed non-flow measures, depending on the actions, could temporarily result in noise in excess of local standards.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to noise, applicable BMPs include the following:

- SMP BMPs - Noise

- GEN-36: Public Outreach
- GEN-38: Minimize Noise Disturbances to Residential Areas

DISCUSSION OF IMPACTS

a) Potentially Significant Impact – Project implementation would generate altered noise conditions during construction activities. However, construction activities would be temporary and short-term, and would not occur outside of the noise restricted hours outlined in the applicable city and/or county noise ordinances. The District would implement standard BMPs. To the extent possible, Project implementation would be consistent with established local standards; however, implementation of individual measures could still result in Noise impacts. Therefore, impacts would be potentially significant with Project implementation.

b) Less-than-Significant Impact – Construction activities have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. However, the Project would not require deep excavation, and construction activity noise levels and vibration would be short-term and temporary. Because the Project would not expose persons to or generate excessive groundborne vibration or noise levels, impacts would be less than significant with Project implementation.

c) No Impact - The Project would not result in any new permanent sources of noise and vibration. Because the Project would not result in any permanent increase in ambient noise levels over existing noise levels, no impact would occur with Project implementation.

d) Potentially Significant Impact – As discussed under Item a) above, construction activities for the Project may result in temporary increases in noise levels in the area, which could increase ambient noise levels over existing levels. Because the Project may result in substantial temporary increases in ambient noise levels, impacts would be potentially significant with Project implementation.

e, f) No Impact – The Project Area is not located within close proximity to an airport land use plan area and is not located within the vicinity of a public, public use, or private airport. Because the Project would not expose people residing or working in the area to excessive noise levels, no impact would occur with Project implementation.

3.2.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The proposed construction activities would primarily occur on property owned either by the District or County of Santa Clara. The Project involves flow changes and limited physical changes to existing District facilities. The Project would not affect the distribution of people living or working in the Project Area and would not require displacing housing or people.

DISCUSSION OF IMPACTS

a) No Impact – Development of the Project would not induce substantial population growth in the Project Area. Because the Project would not induce substantial population grown, no impact would occur with Project implementation.

b, c) No Impact – The Project would not displace any existing homes or people and therefore, would not necessitate the construction of replacement housing elsewhere. Because the Project would not displace substantial numbers of people or existing housing, no impact would occur with Project implementation.

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3.2.14 PUBLIC SERVICES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental 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:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

The Project would not require the construction of new public service facilities or infrastructure. Changing flows and upgrading facilities would not affect the local demand for fire protection or law enforcement services and would not affect schools or other public facilities. However, some Project activities would be located on lands owned by the County and operated by the Parks Department, and as such, temporary access to recreational facilities may be affected by the Project.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to public services, applicable BMPs include the following:

- District BMPs - Transportation/Traffic
    - TR-1 Use Suitable Public Safety Measures
- SMP BMPs - Transportation/Traffic
    - GEN-36: Public Outreach
    - GEN-37: Implement Public Safety Measures
    - GEN-39: Planning for Pedestrians, Traffic Flow and Safety Measures

DISCUSSION OF IMPACTS

a, b, c) Less-than-Significant Impact - The Project would not increase demands for fire and/or police protection or school services because it would not include new housing or business structures, or indirectly increase housing or businesses in the vicinity of the project study area. The Project would not change the type or intensity of land uses in the Project Area. Because the demand for fire, police protection, and school services under the Project would be the same as that currently provided, impacts would be less than significant with Project implementation.

d, e) Less-than-Significant Impact – The Project would not increase demands for parks or other public facilities because it would not include new housing or business structures, or indirectly increase housing or businesses in the vicinity of the Project Area. However, some Project activities would be located on lands owned by the County and operated by the Parks Department. As such, access to these lands and reservoirs during improvements might be temporarily limited. Potential impacts associated with County park lands are discussed in further detail in Section 3.2.15 Recreation. Because the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, impacts would be less than significant with Project implementation.

3.2.15 RECREATION

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Would the project affect access to existing neighborhood and regional parks or other recreational facilities, or 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?	☒	☐	☐	☐
b) Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

The Project would not include or require the construction of new park facilities or infrastructure. Changing flows and upgrading facilities would not affect the local demand for parks, or other recreational facilities. However, some Project activities would occur on lands owned by the County and operated by the Parks Department, and as such, temporary access to recreational facilities may be affected by the Project.

DISCUSSION OF IMPACTS

a) Potentially Significant Impact – Some Project activities would occur on lands owned by the County and operated by the Parks Department. Although the Project is not expected to increase the use of existing neighborhood or regional parks or recreational facilities such that physical deterioration of the facility would occur, construction activities for the Project could temporarily affect access to these recreational resources, which would be a potentially significant impact. Project implementation would include early and ongoing coordination with the County to maintain access to County park and recreational facilities throughout the construction process. Impacts to existing recreational resources as a result of Project implementation will be further evaluated in the EIR.

b) Less-than-Significant Impact – As described under item a) above, some Project activities would occur on lands owned by the County and operated by the Parks Department, and construction activities could result in short-term and temporary impacts to recreational access. Project implementation would include early and ongoing coordination with the County to maintain access to County park and recreational facilities throughout the construction process. Because the Project would not include recreational facilities, or require the construction or expansion of recreational facilities, impacts would be less than significant with Project implementation.

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3.2.16 TRANSPORTATION/TRAFFIC

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) 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 intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) 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?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

The Project would not require changes to any transportation facilities (such as roads, site access points, bicycle and pedestrian facilities, and transit routes). The Project would not conflict with any transportation plans, ordinances, or policies regarding performance of local traffic circulation systems and would not conflict with any applicable congestion management plans. The District would maintain emergency access to individual work sites that are part of the Project and to adjacent areas during and following construction. The Project would not construct any features that would affect existing air traffic patterns.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. In addition, the District would develop detailed staging plans and traffic plans, as necessary, to further reduce any potential for impacts to transportation that could result through implementation of any of the project measures. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions

are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to transportation and traffic, applicable BMPs include the following:

- District BMPs - Transportation/Traffic
    - TR-1 Use Suitable Public Safety Measures
- SMP BMPs - Transportation/Traffic
    - GEN-36: Public Outreach
    - GEN-37: Implement Public Safety Measures
    - GEN-39: Planning for Pedestrians, Traffic Flow, and Safety Measures

DISCUSSION OF IMPACTS

a) Less-than-Significant Impact –The Project would not generate significant vehicle trips, increase the volume to capacity ratio on local roads, or significantly increase the amount of vehicle miles traveled over existing conditions. Minor increases in traffic would occur during the construction period, but such increases would be temporary and short-term. No long term increases in traffic would result from Project implementation. Because the Project would not conflict with or prevent implementation of plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system, and because District standard BMPs would be implemented in the Project Area, impacts would be less than significant with Project implementation.

b) Less-than-Significant Impact - As discussed above in item a), any increase in traffic resulting from construction of the Project would be temporary and short-term. Because construction of the Project would not generate significant vehicle trips and is of a short duration the Project would not add sufficient trips to local roadways to degrade levels of service below acceptable standards. There would be no permanent changes to the level of service standards, travel demands, or congestion after Project construction. Because the Project would not conflict with Santa Clara Valley Transpiration Authority's congestion management program, impacts would be less than significant with Project implementation.

c) No Impact - The Project does not include changes that would affect operations for any local airports, and would not result in any changes in air traffic patterns, increase in air traffic levels, or a change in location that would result in substantial safety risks. Because the Project would not result in a change in air traffic patterns, no impact would occur with Project implementation.

d) No Impact – The Project would not result in alterations to existing public roadways, and the safety of the public transportation network would not be affected. Project operation would not result in any change in land uses, and would not alter the compatibility of uses served by the public roadway network. Because the Project would not substantially increase hazards due to a design feature, no impact would occur with Project implementation.

e) Less-than-Significant Impact – Construction-related traffic would be spread over the duration of the construction schedule and therefore, is would be minimal on a daily basis. Construction of the Project would not result in short-term or long-term impacts to emergency access. Because the Project would not result in inadequate emergency access, and because District standard BMPs would be implemented in the Project Area, impacts would be less than significant with Project implementation.

f) Less-than-Significant Impact - The Project would not affect any other public transportation methods or routes, nor would it conflict with any local plans or policies

regarding public transportation. Because the Project would not conflict with adopted policies, plans, or programs or otherwise decrease the performance or safety of such facilities, impacts would be less than significant with Project implementation.

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TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Would the project:				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒	☐	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☒	☐	☐	☐

As noted in Section 3.2.5 Cultural resources, the physical changes associated with the Project would mainly include upgrades to existing District-owned and maintained lands and facilities. To the extent feasible, these changes would be confined to areas that have been previously disturbed or historically supported similar or the same infrastructure. However, access to individual project sites may require the use of previously undisturbed lands or lands under public or private ownership.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix B (District BMPs) and Appendix D (SMP BMPs). In reference to tribal cultural resources, applicable BMPs include the following:

- District BMPs - Cultural Resources
    - CU-1 Accidental Discovery of Archaeological Artifacts or Burial Finds
- SMP BMPs - Cultural Resources
    - GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts
    - GEN-41: Review of Projects with Native Soil

AB 52 requires a Lead Agency consult with California Native American tribes that have requested notices of proposed projects and that have requested consultation within a prescribed amount of time following a decision to initiate CEQA review of a proposed project. However, for EIRs, formal AB 52 consultation is required only for projects that have a Notice of Preparation filed on or after July 1, 2015. The Notice of Preparation for the FAHCE Program and Fish Habitat Restoration Plan (Document #2015022008) was received by the State Clearinghouse on February 2, 2015, so formal AB 52 consultation for the proposed Project is not required.

DISCUSSION OF IMPACTS

a) Potentially Significant Impact - Areas that would be affected by construction of Project elements are not known to support recorded tribal cultural resources, and the Project would be unlikely to directly affect any tribal cultural resources. Flow measures would not affect any tribal water supplies or water-dependent tribal resources. The District would comply with all applicable laws regarding discovery of previously unrecorded resources, including human remains. However, the potential remains for previously unidentified tribal cultural resources to be discovered during ground disturbing activities, which would be a potentially significant impact. Impacts on tribal cultural resources will be evaluated further in the EIR.

3.2.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water supply, or new water or wastewater treatment facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

The District manages an integrated water resources system that includes the supply of clean, safe water, flood protection, and stewardship of streams on behalf of Santa Clara County's 1.8 million residents (SCVWD 2013a). The District manages 10 dams and surface water reservoirs, three water treatment plants, and more than 275 miles of streams (SCVWD 2013a).

The Project would not require new wastewater or stormwater facilities, nor would it change the way current such facilities are used. The Project could require new solid waste facilities if enough excess material was generated during project implementation. The Project would not affect drainage patterns or amounts. Section 3.2.9, Hydrology and Water Quality, discusses the Project's effects on water supply.

As noted in Chapter 2, during Project implementation, the District would incorporate a range of BMPs to avoid and minimize adverse effects on the environment. The BMPs applicable to the Project are summarized in Chapter 2 and full descriptions are included in Appendix D (SMP BMPs). In reference to utilities and service systems, applicable BMPs include the following:

- SMP BMPs - Utilities

- GEN-42: Investigation of Utility Line Locations

DISCUSSION OF IMPACTS

a) No Impact –The Project would not require or result in the construction of new or expanded water or wastewater treatment facilities. Because the Project would not exceed wastewater treatment requirements of the applicable RWQCB, no impact would occur with Project implementation.

b) Potentially Significant Impact - As noted above, changes in the magnitude and pattern of instream flows resulting from Project implementation could also alter the timing of water diverted to groundwater percolation ponds, resulting in a potentially significant impact on groundwater supplies and/or recharge. As a result, the Project could alter the timing and volume of water delivered to municipal, industrial, and agricultural users, which would be a potentially significant impact. Potential impacts on water supply as a result of Project implementation will be evaluated further in the EIR.

c, d, e) No Impact – The Project would not require or result in the construction of new City or County stormwater drainage facilities or necessitate the expansion of existing facilities. The Project would not require potable water, thus no new or expanded water supply entitlements would be required as a result of Project implementation. The Project would not require service by wastewater treatment facilities and would not affect wastewater treatment capacity. For these reasons, no impacts would occur with Project implementation related to stormwater drainage facilities, water supply entitlements, or wastewater treatment.

f) Potentially Significant Impact - Project activities could generate excess materials during construction in quantities surpassing existing capacity of permitted facilities. Construction debris and excess material requiring disposal in a landfill would need to be hauled off-site to a suitable facility. Following completion of construction, operation of the Project would not require landfill service and thus would not affect landfill capacity. Because the Project would comply with all relevant Federal, state, and local statutes and regulations related to the generation and disposal of solid waste, no impact would occur with Project implementation.

g) No Impact - Because the Project would comply with all relevant Federal, state, and local statutes and regulations related to the generation and disposal of solid waste, no impact would occur with Project implementation.

3.2.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.	☒	☐	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION OF IMPACTS

a) Potentially Significant Impact – Construction activities of the Project could potentially have significant impacts on biological resources including special-status plant and animal species, cultural resources, geology/soils, hydrology/water quality, recreation, tribal cultural resources, and utilities and service systems. These issues will be evaluated in detail the EIR.

b) Potentially Significant Impact – The degree to which Project effects would contribute to a significant cumulative impact will be evaluated in the EIR. To meet the adequacy standard established by the CEQA Guidelines section 15130, the EIR will identify past, present, and reasonably probable future projects producing related or cumulative impacts.

c) Less-than-significant Impact – No project-related environmental effects were identified that would cause substantial adverse effects on human beings. Impacts would be less than significant with Project implementation.

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